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LECTURE I.[1]

Delivered on March 29th.

MR. PRESIDENT AND GENTLEMEN,—When I was invited to give these lectures I felt very sensible of the honour conferred upon me. As soon, however, as the glamour of the situation moderated and the prospect cleared, I realised how difficult it would be worthily to fulfil the duty laid upon me. I called to mind the ox and the charger of the fable—"optat ephippia bos piger; optat arare caballus." There is always, however, something of value to be learned from the experience of the honest observer, and in this belief I venture to offer these results of my clinical experience.

In these later times that important organ, the liver, has, I think, hardly received the attention which it deserves. The rapid development of our knowledge of the nervous system and its diseases has largely absorbed the interest of clinical observers, and the apotheosis of the bacterium and the bacillus has caused those organs which do not favour their exploitation to be somewhat neglected. The heart, indeed, has held its own. It has a natural attractiveness, even fascination, for the clinical observer. The mechanism is well understood; the condition of its machinery is ascertained with comparative ease and precision by various simple means. The lungs, also, in like manner are open to physical examination, and are, moreover, the favourite haunt of micro-organisms; they also retain their position of clinical interest, while the kidneys, although hidden away from easy physical examination, furnish a means of testing their condition through the secretion of urine and thus secure their hold upon medical investigation. That great composite gland, the liver, is, however, less readily dealt with. Not only are its functions more complex and varied than those of any other abdominal organ, but it is a still and silent worker, doing its office noiselessly and without movement. There is no portion of the digestive machinery whose integrity is more important to nutrition; none in which slight disturbances are more common, or more productive of discomfort and impaired health; and yet there is no one of the viscera whose aberrations of function are less accurately and scientifically ascertained.

The physical condition of the liver can only be examined during life partially by the sense of touch, aided in minor degree by auscultation and percussion. The state of its complex functions can only be inferred—and that imperfectly—by the effects of their disorder upon other organs. The difficulties which beset the investigation of the condition of the liver and its functions during life have prevented full knowledge being gained on certain points in its pathology, and the clinical history of its diseases has remained in many respects unsettled. Much excellent work has been done by many physicians during the last 20 years—but much remains to be done. Amongst undetermined questions with regard to disorders of the liver—questions, which still remain the subject of discussion, and about which opinion is not yet finally formed—are some relating to the cirrhoses; and it will be my endeavour in these lectures to throw light upon certain of the obscurities which still beset this group of hepatic affections.

Since my attention has been specially directed to this subject of hepatic cirrhoses a series of cases have come under my observation which have not corresponded strictly or satisfactorily, in clinical or pathological characters, with the description of the disease in its different forms as set forth by authority. I belive that the views generally regarded as established require modification and expansion. The lines laid down are altogether too absolute and too rigid. The conclusions drawn at first and accepted almost without question are necessarily built upon imperfect knowledge and require revision from time to time as experience grows. The clinical picture of cirrhosis, for example, gloomy as is the reality in many respects, has been painted in more melancholy colours than is altogether warranted by facts. The interest in the disease has centred in the post-mortem room rather than at the bedside; and the revelations of the former have overshadowed the brighter possibilities which are sometimes indicated by the latter. In passing judgment upon the disease all forms of it have commonly been vaguely run together under the general term "cirrhosis"; and the last stage of the most fatal condition has been regarded as representative; the remediable and the irremediable have been confused together in one stereotyped picture of unalterable disease, and this absolutely unfavourable verdict has, I think, been largely influenced by the disastrous results of mistaken treatment.

Cirrhosis of the liver occurs in various forms and in different degrees. It does not, as some would appear to conceive, arise suddenly fully developed—in the extreme form of the final stage of atrophic degeneration. There are cirrhoses and cirrhoses, and each has its successive stages of development. It is no doubt a subtle and secret malady—as a rule its existence is not suspected until it has reached such degree that grave symptoms have arisen to draw attention to its presence. But disease does not always proceed upon the lines laid down for it; is not rigidly bound by routine and red tape; is occasionally unorthodox; and cirrhosis now and again betrays itself at an earlier period of its course than the final stage prescribed for its disclosure. Symptoms, such as ascites, may anticipate the ordinary term and give opportunity for remedial treatment, so that in comparatively favourable although infrequent cases the patient may recover for a time of varying length—months or even years—and be afforded a respite of appreciable value.

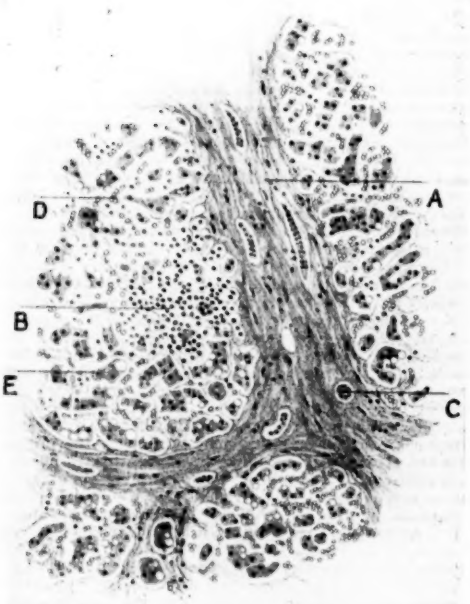
It is my purpose to deal mainly with the three chief forms of cirrhosis and those with which ascites in its most pronounced and characteristic form is specially associated. It is on those distinguished as atrophic cirrhosis, hypertrophic cirrhosis, and syphilitic cirrhosis—that the main interest of the subject centres. Before proceeding further, however, it will be well to clear the ground by putting aside certain minor forms which lie outside the strict lines of the present inquiry. Amongst these are those conditions of fibrosis which are due to the obstruction of venous escape from the hepatic vein—as in mediastinal tumours, mediastinitis—or associated with general dropsy in mitral and tricuspid disease of the heart. The hepatic fibrosis which is set up by chronic venous congestion of this kind, is, as a rule, only slight cirrhosis, not usually sufficient in itself to interfere materially with nutrition, or to cause such serious portal obstruction as to give rise to abdominal dropsy. The peritoneal effusion is not great, and forms merely a part as it were of the general dropsy which follows the damming back of blood in the systemic venous system. Yet in some instances of this congestive cirrhosis we meet with an ascites as a distinct feature which is out of all proportion to the effusion elsewhere—not merely a part of general dropsy, but a special effusion into the peritoneal cavity—a true ascites due to added difficulty in the portal area; the systemic obstruction, insufficient alone to produce a general dropsy, reinforced by the *hepatic* obstruction causing *peritoneal* dropsy. I wish to draw attention to this because it has, I think, an important bearing upon certain cases of hypertrophic cirrhosis of which I have to speak later. The condition of pure cardiac cirrhosis considerable enough to produce ascites is shown in the accompanying reproduction of a drawing (see Fig. 1) of a section from a case under the care of Dr. Penrose, to whom I am indebted for permission to use it. The great trio of representative hepatic fibroses, which have been distinguished as atrophic cirrhosis, hypertrophic cirrhosis, and syphilitic cirrhosis, all marked by the increased formation of fibrous tissue in the structure of the liver, in their perfect type differ in clinical character, course, and pathological anatomy each from the other.

Although these things are familiar to all you will pardon me perhaps if, for the sake of greater clearness, I enumerate briefly the special characters which have been generally regarded as distinctive of each of the three cirrhoses.

[1] Lectures II. and III. will be delivered on April 3rd and 5th, 1900, respectively.

1. In atrophic cirrhosis the fibrous invasion is described as spreading along the main branches of the interstitial tree, embracing groups of lobules and compressing them, and thus causing atrophy and destruction of cells. The new fibrous growth between the enclosed groups of lobules contracts, and drawing in the surface at these points causes

FIG. 1.



Hypertrophic cirrhosis of the liver due to long venous congestion from tricuspid incompetence. A, Coarse fibrosis. B, Commencing fibrosis. C, Pseudo ducts. D, Blood. E, Liver substance showing fatty change.

hobnailing of the surface and shrinkage of the whole organ, so that it is much smaller than normal, decreased in weight, tough, and hard. Amongst the clinical features which are laid down as characteristic of atrophic cirrhosis as contrasted with other forms are signs of portal obstruction, evidenced by the frequency of ascites and the occurrence of hæmorrhage from the stomach and bowels, the rarity of jaundice, the short course of the disease after it can be recognised, its inevitable fatality, and that it is almost invariably set up by chronic alcoholic irritation—atrophic multilobular cirrhosis or hobnail liver.

2. In the second form of cirrhosis—the hypertrophic form—described by Hanot as "biliary cirrhosis"—the liver condition is stated to be characterised by increase in size and weight. The fibrosis which invades the interstitial tree affects the smaller twigs rather than the main branches, embracing single lobules, and even single cells, instead of groups of lobules, accompanied, moreover, by a curious development of biliary canaliculi at the periphery of the lobule, due either to the formation of new ductules there or to the exposure of existing ones by denudation through the destruction of hepatic cells. In this form the liver is greatly enlarged, it is hard, smooth of surface, or only slightly granular—hypertrophic monolobular ciliary cirrhosis.

The clinical aspect of hypertrophic cirrhosis as laid down by authority is characterised by features which contrast sharply with those of the atrophic form. Ascites is described as entirely absent, or, if present, so slight as to be comparatively unimportant, while jaundice on the contrary is said to be an almost invariable symptom and is often intense and persistent. Intermittent attacks of pain and pyrexia, enlargement of the spleen, and a liability to the supervention of acute symptoms, such as severe delirium, hæmorrhages, coma, and a chronic course of some years, are other signs which are said to distinguish hypertrophic cirrhosis. Its cause is involved in obscurity; a doubtful factor, in some instances supposed to be malarial, in some alcoholic, in some obstruction to ducts, is credited with setting up inflammation of the biliary canaliculi, which is regarded as the starting-point of the pathological change.

3. The third variety of cirrhosis—the syphilitic—is described as characterised by the presence of broad bands of fibrous tissue separating isolated masses of liver tissue and causing destruction of hepatic cells. The organ is often much deformed by the gradual contraction of these several fibrous bands giving it a lobulated appearance, its surface is marked by rounded bosses, often scarred and furrowed, or only slightly uneven; gummata may also be present in various stages. A hard liver, usually enlarged, sometimes contracted, with uneven, bossed, or slightly irregular surface.

The clinical features of this kind of cirrhosis closely resemble one or other of the preceding forms—in the early stage of enlargement the hypertrophic and in the later either the hypertrophic or atrophic alcoholic form. In one case there is jaundice but no ascites; in another there are both; in a third there is neither, but, as a rule, when advanced, ascites and perihepatitis. There is another form of syphilitic cirrhosis described as chiefly limited to the hereditary syphilis of childhood—a diffuse fibrosis, characterised microscopically by its immature, partly cellular, character, penetrating the lobules and even between the cells. The liver is greatly enlarged—clinically, jaundice, ascites, and emaciation are amongst the chief symptoms.

POINTS IN THE PATHOLOGY AND CLINICAL HISTORY OF THE CIRRHOSES NOT YET FINALLY DECIDED.

Although there is a tolerably consistent general agreement as to the main features of the morbid anatomy of cirrhosis there is still some confusion as to the relation of the different changes to clinical conditions; discrepancies of opinion on certain points of etiology; divergent views as to the symptoms and course of the disease in its different forms. Amongst the questions awaiting an accepted and final settlement are the following. Is atrophic cirrhosis—i.e., the contracted hobnail liver—always of alcoholic origin? Is the liver small from the first or is there an earlier stage in which it is enlarged, becoming contracted later? Or is atrophic cirrhosis merely a late stage of hypertrophic cirrhosis? Or is there an alcoholic cirrhosis in which the liver is hypertrophied and enlarged from first to last? Or is hypertrophic cirrhosis limited to the biliary cirrhosis of Hanot and Charcot of uncertain origin? Or it is even asked, Does the biliary form described by French authorities exist at all as a distinct entity? Again, is ascites practically limited to the atrophic form—almost unknown in the hypertrophic? and, on the other hand, is jaundice rare in atrophic cirrhosis—almost invariable in the hypertrophic form? Are the microscopic characters of monolobular cirrhosis, with hyperplasia of the bile-ducts, as described in the biliary hypertrophic cirrhosis of Hanot and Charcot, found only in cases which correspond to that clinical type? or are they met with in both atrophic and hypertrophic cirrhoses of alcoholic origin? The part played by alcohol, syphilis, and malaria in causation and their connexion with special types of affection; the incidence and significance of perihepatitis, the curability of ascites, the efficacy of paracentesis or its uselessness in the treatment of it, the possibility, not of curing cirrhosis, but of prolonging the life of the cirrhotic patient by this and other means, the conditions under which the course of cirrhosis can be favourably influenced in this way—are other points upon which there is a general agreement. It is to some of these questions that I shall endeavour to find an answer.

FACTORS IN THE CAUSATION.

Atrophic cirrhosis of the contracted hobnailed liver would appear to be almost invariably of alcoholic origin. It is said that malaria sometimes plays a part in its production, but the evidence of this is by no means conclusive. I have met with no instance of the kind; yet it is not intrinsically improbable that a disease like malarial fever which sets up such marked fibrosis of the spleen should also set up an analogous fibrosis of the liver. In those cases attributed to malarious influences, however, when the cirrhosis is of the contracted hobnailed variety, at all events it is probable that alcohol, an agent by no means inactive in malarial districts, is largely concerned in its production.

THE QUESTION OF AN EARLY STAGE OF ENLARGEMENT IN THE ATROPHIC FORM.

Another question which has been much debated is, Is the liver enlarged in the early stage of atrophic cirrhosis? Is it first hypertrophied and subsequently diminished in size as fibrotic contraction proceeds? The older writers generally held that this was so occasionally but that it was exceptional. Murchison[2] expressed the opinion that it was a matter for further investigation whether, if a patient with enlarged liver survived long enough, the enlargement would be followed by cirrhotic contraction? In one case reported by him in which the liver was greatly enlarged from cirrhosis attributed to alcohol and malaria the organ was found to be of its natural size three years later. The patient was treated with mercury, however, and it is doubtful if the condition was one of simple alcoholic cirrhosis. The patient got well and the decrease of size ceased at the normal level.

Instances have been recorded by Dr. Frederick Taylor and others[3] in which the greatly enlarged liver of alcoholic cirrhosis has been observed to undergo contraction. I have watched a number of these cases of cirrhosis with enlargement for considerable periods—one for nearly 12 years, one for eight years, and one for two years. In the first there has been some slight decrease in size, but great enlargement is a characteristic feature still, and in no case have I observed the condition change from an enlarged to a small contracted liver. I think, however, that there is a stage of engorgement and congestive swelling in the atrophic cases before fibrotic contraction is fairly in process. We are all of us familiar with the enlarged liver of the drinker who has not developed any symptoms of actual cirrhosis. This, however, is quite distinct from the large, hard liver of hypertrophic cirrhosis, which does not merge into the atrophic form. Such contraction as that described in Dr. Taylor's case must at least be extremely rare. The hypertrophied liver does not regularly represent the early stage of the contracted form. The microscopic characters alone negative this—in the one the fibrosis multilobular almost invariably, in the other monolobular or a combination of the two. Hanot, indeed, recognised that hypertrophic cirrhosis of alcoholic origin was not merely an early stage of the atrophic form.[4]

The error of regarding the hypertrophic and atrophic condition as different stages of the same thing has probably arisen from its being observed that in some cases the liver was large and that in others it was small; and since a permanent hypertrophy was supposed to be limited to Hanot's biliary form the inference was too hastily drawn that in alcoholic cirrhosis the large and small were connected and merely different stages of the same affection. They are distinct varieties, rather than different stages of alcoholic cirrhosis.

ASCITES IN ATROPHIC CIRRHOSIS—ITS SIGNIFICANT VIABILITY IN ATROPHIC CIRRHOSIS.

In the next place, Is the occurrence of ascites a special feature of atrophic cirrhosis and practically limited to the final stage of it? and is it as rare in the hypertrophic form as it is common in the atrophic? There can be no doubt as to the frequency of ascites in atrophic cirrhosis. In 23 consecutive cases of fatal cirrhosis at St. Mary's Hospital in which the liver was small (under 60 ounces) ascites was present in 17 cases and absent in six only. Nor can there be any question of its grave significance in the majority of cases. It indicates generally that the disease has progressed towards its end—that the collateral circulation established has become inadequate to the full relief of the obstructed portal circulation and that the destruction of liver tissue, advancing usually *pari passu*, has reached the limit of viability. As a rule, but by no means invariably, the patient has only a few months to live; now and again, however, the months are extended to a year or two. As a matter of fact, the supervention of marked jaundice in atrophic cirrhosis is of more immediately fatal augury than the appearance of ascites. There are cases of atrophic cirrhosis in which ascites supervenes before the final stage, when sufficient glandular structure still remains intact and functionally effective to carry on life, and the obstruction to the portal system is not yet so great as to be past compensation by collateral channels, so that partial recovery may take place for a time.

The stage of the liver change at which such survival for a time, after the advent of ascites, is possible, is illustrated by the case of a woman admitted to St. Mary's Hospital for hæmatemesis and ascites in October, 1891. She was a confirmed spirit drinker. She was tapped three times at intervals and recovered her general health sufficiently to return to her usual home life, but came into hospital more than a year later with acute bronchitis from which she died. Post mortem the liver was found to be moderately hobnailed, small, but microscopically a large portion of liver tissue, calculated at about one-half, was found to be normal and presumably effective. Her condition, although vulnerable, was still viable under favourable circumstances. I might adduce a number of other examples which show in like manner that the occurrence of ascites in atrophic cirrhosis is not always such sentence of immediate death as is commonly inferred. This evidence will, however, be brought forward more appropriately when I come to speak of prognosis.

THE OCCURRENCE OF JAUNDICE IN ATROPHIC CIRRHOSIS.

In the standard descriptions of the symptoms pertaining to atrophic cirrhosis a point is made of the fact that although a slight icteric tint may be present, marked jaundice is conspicuously absent as compared with its almost invariable presence in the hypertrophic form. Here, again, we have been misled by the assumption that hypertrophic cirrhosis usually corresponds with Hanot's special biliary form. The matter is of no great moment, but no such hard-and-fast line as to the occurrence of jaundice can be drawn. Jaundice of a marked character is not consistently absent in the small liver of alcoholism, and on the other hand it is by no means constantly present in the hypertrophic form; Murchison[5] observed that although decided jaundice is rarely met with in atrophic cirrhosis in the early stage it may occur in advanced stages and is then an ominous symptom. Dr. Foxwell,[6] as the result of his investigation of 67 cases, concludes that jaundice and cerebral symptoms are as common when the liver is small as when it is large. In 53 fatal cases of cirrhosis of all kinds at St. Mary's Hospital during the last ten years I find eight in which marked jaundice was observed. In four of these cases the liver was small and in four enlarged. The distinction between the two forms with regard to the occurrence of jaundice should be, that whilst it is met with pretty equally in both forms, it occurs at an earlier stage in the hypertrophic than in the atrophic condition, in which latter it is often indicative of the approach of a fatal termination.

THE CHARACTER OF THE FIBROSIS IN ATROPHIC CIRRHOSIS.

Another question of some interest in connexion with atrophic cirrhosis is whether the fibrosis is always of the coarse multilobular kind, affecting the main branches of the interstitial tree, or whether the finer interlobular variety, which is undoubtedly most characteristic of the hypertrophic form, is found in the small contracted liver also. In the 53 cases adduced the liver was specially examined microscopically in 18. In one only of the distinctly contracted specimens was the fibrosis diffuse; in the rest it was coarse and multilobular. In a few instances a small amount of finer fibrosis was observed invading the lobules.

THE ASSOCIATION OF ATROPHIC CIRRHOSIS AND BRIGHT'S DISEASE.

A certain amount of interstitial change is found in the kidneys in a large proportion of cases (about one half) of alcoholic cirrhosis. In most it is not extreme; and this fibrosis of the kidney is to be regarded as a result of alcoholism—just as is the fibrosis of the liver—the kidney being affected usually in minor degree. In some cases the interstitial nephritis is advanced and, associated with the Bright's disease, a special form of cirrhotic atrophy is occasionally found which has been more particularly described by Dr. C. H. Fagge and Dr. Hale White. In this the liver is greatly contracted, its substance is atrophied, but the connective tissue is not always greatly increased. The capsule is much thickened, and there are also extensive perihepatitis and associated adhesive peritonitis and ascites, which are attributed chiefly to the perihepatitis and chronic peritonitis. This condition of perihepatitis and chronic peritonitis is well exemplified by a case that was under my care in 1896.

[2] Diseases of the Liver, second edition, p. 140.
[3] Guy's Hospital Reports, 1888, vol. xlv., p. 310.
[4] Hanot and Gilbert: Bulletin de la Société Médicale des Hôpitaux, 1890, vol. clxvi.
[5] Diseases of the Liver, second edition, p. 128.
[6] Birmingham Medical Review, vol. l., 1896.

A woman, aged 50 years, had been a patient at intervals for the previous 12 months for ascites and had been tapped nine times. The last operation proved fatal owing to septic peritonitis. The stomach and intestines were thickened and adherent from old peritoneal inflammation of which the hepatic region was the chief centre. The liver was small, surrounded by a thick, false membrane, moderately cirrhosed, weighing 40 ounces. The kidneys were extremely granular.

This same condition of perihepatitis and dry peritonitis with adhesions occurs, however, in atrophic cirrhosis apart from Bright's disease. In one case, that of a patient (Dec. 2nd, 1898) who was tapped 11 times, there were perihepatitis, chronic peritoneal adhesions, perisplenitis, and thickening of the intestines with advanced cirrhosis; the liver weighed only 33 ounces, but the kidneys were normal.

In another still more extreme case under my care, that of a woman, aged 39 years, a confirmed gin drinker, this condition of perihepatitis and associated adhesive peritonitis was equally marked. She was admitted first in July, 1893, for ascites and peripheral neuritis; she was tapped twice, discharged relieved, and admitted again six months later for the same trouble; she was again tapped twice and discharged relieved; she was admitted a third time one year later and again tapped. On this occasion, however, suppurative peritonitis followed, apparently from fouling of the drainage tube, which was accidentally displaced and the case ended fatally. The post-mortem examination revealed extreme perihepatitis with thickening and adhesion of adjacent intestines and advanced cirrhosis of the liver, which was typically hobnailed and which weighed only 18 ounces. The kidneys were not affected.

In the 53 cases mentioned there are 15 in which extensive perihepatitis is recorded, usually with extension of peritonitis and adhesions to neighbouring structures, notably the diaphragm, stomach, and transverse colon. Of these 15 four were syphilitic; in one of these parenchymatous nephritis was present; in the remaining three the kidneys were normal. Of the 11 others, in four the kidneys were more or less granular, in three they were enlarged, and in five they were normal. In 22 cases of the 53 the perihepatitis was slight or not recorded. In four cases there was acute peritonitis. Of these the kidneys were fibrosed in three; in one (which was syphilitic) there was cloudy swelling. In five of the 53 cases there was some chronic peritonitis other than perihepatitis. Of these in one the kidneys were granular, in two they were large and tough, and in two they were not affected. In six of the last cases examined in which the condition was specially noted it is stated positively that there was no peritonitis. In five of these the kidneys were cirrhotic; in one they were congested only.

Since therefore in these cases of cirrhosis with extensive perihepatitis and adhesive peritonitis of neighbouring structures the kidneys are not constantly affected and, on the other hand, when the kidneys are granular there may be no peritonitis, the presumption is that the cirrhosis, perihepatitis, and Bright's disease are probably due to the same cause—chronic alcoholic poisoning. As I shall show later the most marked instances of perihepatitis and related peritonitis which I have seen have been in connexion with syphilitic cirrhosis, in which connexion Murchison also observed it.

HYPERTROPHIC CIRRHOSIS.

The first question which arises with respect to cirrhosis with enlargement of the liver, is whether the affection described by Hanot and Charcot as a biliary cirrhosis of uncertain origin is to be accepted as the representative form of hypertrophic cirrhosis, or if it exists even as a separate entity or is merely a modified form of alcoholic cirrhosis. It will be remembered that hypertrophic cirrhosis is described as having a special morbid anatomy and a distinct clinical history and course which give it a marked individuality of its own. I think that we have been unduly biased by the classical description of Hanot, as we were formerly by Laennec's description of the atrophic form, and have had no eyes to see obvious facts. Just as deference to Laennec's authority led to the too ready assumption that an enlarged fibrosed liver must be an early stage of the atrophic form, so, when the existence of a distinct hypertrophic condition, always hypertrophic, and of special character was demonstrated it was assumed that every cirrhosis with enlargement must conform to this special variety. It is surprising how a definite observation of this kind, stated with authority, holds sway, and its general application long remains unquestioned, as all-comprehensive, without further examination or inquiry. Subsequent research, however, has proved that many of the features which were considered to be distinctive of the so-called biliary cirrhosis are not peculiar to that exact type, but occur also in cirrhoses which in other points do not conform to Hanot's description.

THE CHARACTER OF THE FIBROSIS.

Thus, for example, there is now no question that a fine fibrosis, monolobular or intralobular in arrangement, occurs in conjunction with hypertrophy of the liver in cirrhosis due to alcohol; and this diffuse fibrosis appears also to be met with in the cirrhosis attributed to malaria which is usually hypertrophic and in pure cardiac cirrhosis.[7] It is also established, I think, without question that the appearance of hyperplasia of bile-ducts in the highly nucleated tissue between the lobules is not met with in cirrhosis with the clinical characters of Hanot's form alone. Dr. R. Saundby[8] has shown that this appearance of new canaliculi occurs in cases of ordinary cirrhosis, and also that it is not always present in any marked degree in cases presenting the clinical characters of biliary cirrhosis. Dr. Frederick Taylor has produced evidence of a like nature.[9] In a case of alcoholic cirrhosis with enlarged liver recently under my care this appearance was found in conjunction with a coarse fibrosis and in another instance a fine fibrosis was observed in a case of alcoholic cirrhosis without jaundice in which the liver was not enlarged, weighing 53 ounces. This same formation of so-called biliary canaliculi is also seen in the simple fibrosis of heart disease as shown in the illustration (see Fig. 1). The interstitial fibrosis most commonly met with in cirrhosis in which the liver is enlarged is a combination of coarse multilobular and fine monolobular development. The microscopic distinction therefore does not hold.

THE OCCURRENCE OF JAUNDICE.

In the next place, the presence of jaundice is by no means a constant or, according to my experience, a very common symptom of hypertrophic cirrhosis. In 17 consecutive fatal cases of cirrhosis with enlarged liver, varying in weight from 60 to 134 ounces, I find jaundice noted as a marked symptom in four only; in six it is described as slight, and in the remaining seven none is recorded. Again, out of 27 more cases of cirrhosis with enlarged liver in which the patients have either recovered or have been relieved or in which, if fatal, no post-mortem examination was made, jaundice was absent in 19 and present only in eight. In 10 cases of enlarged fibrous livers from different causes recorded by Murchison jaundice is mentioned as a symptom in four only, and, as noted before, Dr. Foxwell's investigation of 67 cases of cirrhosis yielded the conclusion that jaundice was as common when the liver was contracted as when it was enlarged.[10] It is clear, therefore, that jaundice is by no means a constant or characteristic symptom of hypertrophic cirrhosis generally; and, on the other hand, as we have seen before, jaundice in marked degree is by no means rare in the atrophic form.

ASCITES IN THE HYPERTROPHIC FORM.

Again, in the typical form of hypertrophic biliary cirrhosis the absence of ascites in any important degree is described as being as distinctive a feature as the presence of jaundice. This certainly does not hold good with regard to the hypertrophic cirrhosis which has come under my observation. In the 25 fatal cases of hypertrophic cirrhosis in which the liver weight varied between 60 and 134 ounces ascites was present in 16. In six which recovered more or less perfectly ascites was a prominent symptom in all but one. In the 10 cases of hypertrophic cirrhosis given by Murchison ascites was present in seven. Bristowe records one of alcoholic cirrhosis with great enlargement in which the patient was tapped 14 times for ascites. In the 67 cases of alcoholic cirrhosis recorded by Dr. Foxwell he found that ascites was as common when the liver was large as when it was small. The absence of ascites, therefore, is not a constant and typical negative symptom of cirrhosis when the liver is enlarged, any more than the presence of jaundice is a reliable sign or distinctive symptom of the hypertrophic form. It is, I think, probable that this impression of the frequency of the occurrence of ascites in contracted liver, and its

[7] Davidson: Hygiene and Diseases of Warm Climates.
[8] Transactions of the Pathological Society, 1879, p. 200.
[9] Guy's Hospital Reports, 1895, p. 65.
[10] Birmingham Medical Review, vol. i., 1896.

absence in the enlarged liver, has arisen partly from the fact that atrophic cirrhosis escapes notice until ascites arises to draw attention to it. A liver smaller than natural is not obtrusive. When the liver is enlarged, however, it challenges recognition and is often discovered before ascites supervenes. Enlargement of the spleen, again, is not an especial feature of hypertrophic cirrhosis. In the 53 cases which I have instanced it was enlarged in the great majority of alcoholic cirrhoses, both large and small, but the greatest size was reached in the syphilitic cases, in one of which it attained to 42½ ounces, or six times the normal weight.

PAIN AND PYREXIA; SUPERVENTION OF DELIRIUM, COMA, AND THE TYPHOID STATE.

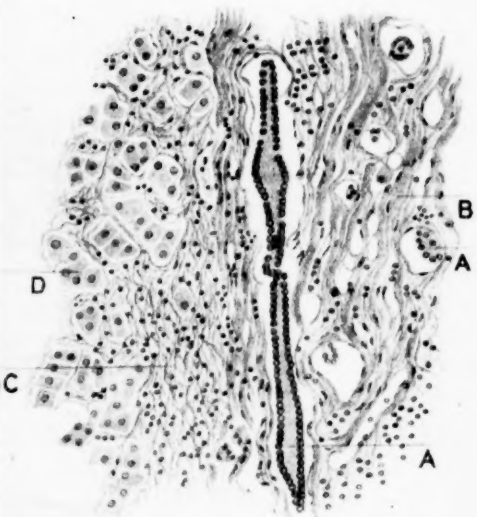
Another feature which is said to mark the course of biliary cirrhosis is the occurrence of attacks of pain and pyrexia. These symptoms are not, however, peculiar to cases of the kind. They are met with in atrophic cirrhosis,[11] in alcoholic hypertrophic cirrhosis without the characteristics of the biliary form, and notably in syphilitic cirrhosis.[12] Pain, tenderness, and pyrexia are, I imagine, merely an indication of the supervention of perihepatitis. The charts show the pyrexia, coexisting with pain and tenderness, which mark the presence of perihepatitis in all forms of cirrhoses. Grave symptoms, such as delirium, the typhoid state, and coma, are not confined to hypertrophic cirrhosis of the so-called biliary type. They occur in hypertrophic cirrhosis of alcoholic origin and type and, as Murchison noted, and as I have seen, in atrophic cirrhosis also. These symptoms cannot therefore be regarded as distinctive of special forms of hypertrophic cirrhosis.

THE CHRONIC COURSE.

Lastly, the course of the typical form of hypertrophic cirrhosis is stated to be a chronic one of two, four, or six years, or more. It must be allowed that the cases which run a protracted course are those in which the liver is enlarged; they are as a rule more benign. This is, however, not invariable, and Dr. Dreschfeld[13] has recently published a case of alcoholic hypertrophic cirrhosis which, while agreeing with Hanot's affection in many respects, differed in the presence of ascites, and in the short course of the disease. Chronicity then cannot be regarded as a constant character of hypertrophic cirrhosis.

It will be seen therefore that a cirrhosis in which the liver is greatly enlarged may fail to correspond in one case or other in nearly every particular with the classical type for which we all look and so rarely find. Further, from the time of Murchison downwards a number of cases of cirrhosis have been recorded by Saundby, Bristowe, Dreschfeld, Foxwell, and others in which, although the liver was greatly enlarged, the symptoms have been those usually ascribed to the contracted liver, rather than those attributed to so-called biliary cirrhosis. And in the majority of instances the cause has been traced to alcoholic intoxication. A number of like cases have come under my own observation, the details of some of which I shall giver later. For the present I may say that the hypertrophic cirrhosis which I have met with corresponds with the cirrhosis of Hanot chiefly in two respects—viz., in the smooth, hard enlargement of the liver, and that the fibrosis is usually diffuse and monolobular and sometimes partly multilobular. In one instance, however, in which the liver weighed 152 ounces the cirrhosis was coarse and multilobular, with much fatty deposit. Is it, therefore, to be inferred that no such special form of hypertrophic cirrhosis as that described by Hanot and recognised by Charcot actually exists? I think that we are not warranted in assuming this absolutely. In addition to the original cases described so graphically by the French writers other isolated instances have been observed now and again in this country and abroad which agree closely with the so-called biliary type. For my part I have not, in spite of a close scrutiny for 16 years, met with a case which has exhibited in full completeness the typical presentment of the French authorities. In three instances only have I seen any close approximation to it. One of them occurred in a boy aged eight years who was admitted for jaundice, enlarged liver, and ascites, and who died from exhaustion and emaciation four years later. He had had repeated attacks of jaundice since birth. Post mortem a smooth large liver was found weighing 60 ounces, with fine diffuse fibrosis, abundant nuclear growth, and imperfectly formed fibrous tissue. There was extensive perihepatitis, and the vessels of the portal fissure were found to be matted together, the cystic and hepatic ducts being reduced to mere cords and quite impervious. In another example[14] in which the patient was admitted for abdominal pain and jaundice which had existed on and off for six years the liver was enlarged to the level of the umbilicus. The spleen was also enlarged and ascites was present. Post mortem the liver was slightly granular and it weighed 80 ounces. The common bile-duct was found to be enormously dilated from blockage by two large gall-stones. Microscopically the fibrosis was seen to be fine, with some coarse strands in which pseudo-ducts were conspicuous (see Fig. 2).

FIG. 2.



Diffuse hypertrophic cirrhosis of the liver associated with obstruction of the common bile-duct by gall-stones. A, Pseudo duct. B, Coarse fibrosis. C, Fine fibrosis. D, Liver cells.

These two cases are especially interesting, because they correspond in most respects with results obtained experimentally by the ligature of the common duct in animals. They differ from Hanot's form chiefly in the existence of ascites and the occlusion of the duct. Cases of cirrhosis associated with gall-stones have been recorded by Dr. S. Mackenzie,[15] Mr. D'Arcy Power,[16] and others. The fact remains, however, that in the majority of cases of obstructive jaundice, even when prolonged, no cirrhosis follows.

The third case was that of a man aged 42 years (Case 8, 1898), an indoor servant and heavy drinker, whose face bore testimony to his habits, who was admitted with deep jaundice of five weeks' duration, delirium, and pyrexia, and who died on the next day; there was no ascites. Post mortem the liver was found to be greatly enlarged, weighing 114 ounces; it was smooth, bile-stained, free from perihepatitis, and the structure showed a fine fibrosis of ill-formed nuclear fibrous tissue. Many of the hepatic cells were destroyed; the others were fatty. The kidneys were slightly granular and fatty. Here again the disease was not chronic or the jaundice of long standing, and the cause was alcoholic.

Although in view of the detailed description of such cases occurring in the experience of others it must be allowed that, clinically at all events, cirrhosis of that precise character does arise from time to time, it is certain

[11] Case 22, 1894; Case 10, 1898.
[12] G. H., 1899.
[13] THE LANCET, Nov. 18th, 1899, p. 1377.
[14] E. W., December, 1899.
[15] Transactions of the Pathological Society of London, 1889.
[16] Ibid., 1890.

that it is rare, at least in this country. It is, moreover, still doubtful whether these rare examples are entirely distinct from hypertrophic cirrhosis of alcoholic origin or are merely an exceptional variety of it. At all events, the representative fibrosis of the liver with enlargement is, in the vast majority of cases, a hypertrophic cirrhosis set up by alcohol equally with the atrophic form, in other instances by syphilis, and not the rare condition described by the French pathologists.

SYPHILITIC CIRRHOSIS.

The points at issue with regard to syphilitic cirrhosis are comparatively few. The ordinary form which results from acquired syphilis in the tertiary stage has usually well-marked characteristics when the liver is examined after death, although its identification during life is often extremely difficult and mistakes in diagnosis are frequent with regard to it. In a typical instance the gummata in various stages, the massive wedges penetrating the liver substance at various points, the scarring and puckering and lobulation, and the extensive perihepatitis are striking and unmistakeable morbid appearances. Microscopically may be seen the gummatous cellular growth developing into fibrous tissue or undergoing caseation. In the specimen represented here, for which I am indebted to my friend Dr. Poynton, there is seen also well-marked endarteritis obliterans—a condition well known as the result of tertiary syphilis elsewhere, but, as far as I am aware, not observed directly in connexion with hepatic syphilis, until it was noted in this case by Mr. Plimmer, our able pathologist at St. Mary's Hospital (see Figs. 3 and 4). In a paper by Hanot and Chauffard[17] this condition of arteritis is described, and drawings of it given, as met with in hypertrophic cirrhosis with pigmentation and diabetes, to which latter affection the cirrhosis was regarded as secondary. In one case, however, scarring is mentioned, a condition which is very suggestive of syphilitic affection. In the second case, it is said, there was no history of syphilis and the surface of the liver was flat and finely granular.

One point which is not sufficiently recognised and which I would emphasise is that the morbid changes in syphilitic cirrhosis may exist in every degree. Occasionally they are so slight as scarcely to alter the normal appearance of the organ; a few small scars, some thickening of the hepatic capsule, or slight perihepatitis, may be the only morbid features perceptible externally on post-mortem examination. This fact is of great importance in its bearing upon diagnosis. There may be no suspicious history, nothing whatever distinctive in the physical signs made out during life. The condition of the liver, as ascertained by examination of the abdomen, may correspond exactly with that of an ordinary alcoholic cirrhosis. Another feature of syphilitic cirrhosis is the degree of perihepatitis and local peritonitis in the region of the liver. This condition of general perihepatitis with extension to neighbouring structures is far more marked in connexion with syphilitic disease than in any other condition. The four most notable examples which I have met with, as I stated previously, have been in this relation.[18] In these the kidneys were normal except in one instance when there was parenchymatous nephritis. In the most extreme of all[19] the liver was studded with gummata in various stages, the capsule being covered with thick coating and

FIG. 3.

Syphilitic cirrhosis of the liver showing endarteritis obliterans of the hepatic artery in a portal vein. A, Endarteritis obliterans in various stages. B, Bile-duct. C, Portal vein. D, Liver substance.

[17] Revue de Médecine, 1882. "Cirrhose Hypertrophique pigmentaire dans le diabète."

[18] A. B., liver weight 134 ounces; C. D., liver weight 60 ounces; E. F., liver weight 88 ounces; G. H., liver weight 58 ounces. [19] G. H.

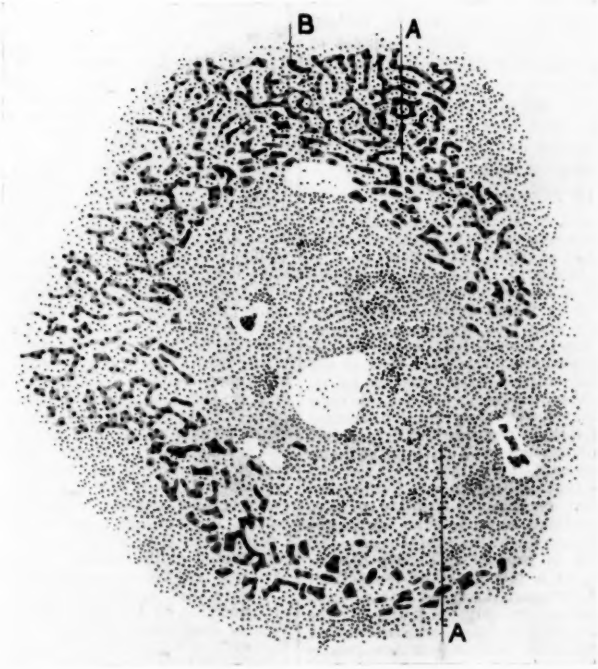
adherent to the diaphragm, the abdominal wall, and the transverse colon. The stomach and spleen were bound down by adhesions and the liver and adjacent viscera were glued together in an inseparable mass. The liver was clearly the centre from which all the neighbouring peritonitis had spread. The kidneys were absolutely healthy, yet there was no history of syphilis. The man was married and had healthy children.

This point of the great development of perihepatitis and local peritonitis in many cases of syphilitic cirrhosis has been imperfectly recognised. Perihepatitis has been usually regarded as more especially associated with other forms. Murchison, however, observed that it was met with in marked degree in syphilitic cirrhosis and in connexion with long-standing disease of the heart. He described it as accompanied by fibrous bands extending from the capsule into the liver structure and causing atrophy. The fact of the favour of the syphilitic nature of the affection. The charts of temperature afford valuable indications of the existence of perihepatitis. Perihepatitis does occur in pure alcoholic cases, and in connexion with Bright's disease, but, according to my observation, it is not so constant or so extreme as in syphilitic cirrhosis.

Another undetermined question is as to the specific cirrhosis which arises in young children as a result of congenital syphilis. I have not met with any instance of gummatous development such as is found in the acquired disease, although it has been described by Ziegler and others. The smooth liver greatly enlarged offers no points of distinction from a liver enlarged from other causes, and the diagnosis must depend upon the history or the existence of other signs of the disease.

Post mortem the microscope reveals a' very distinct form of cellular infiltration and early fibrosis which

FIG. 4



Syphilitic cirrhosis showing the early stage of a gumma. A, Small cell infiltration. B, Liver cells.

association of extensive perihepatitis and local peritonitis with syphilitic cirrhosis is of considerable clinical importance. There may be, as I have observed, no history of syphilis in these cases. In 10 cases of which I have notes—eight of which were fatal, the gummata being found post mortem—in two only was there any definite history of syphilis; in two others syphilitic scars were found during life, but distinctive physical signs in the shape of irregularities or bossing of the surface were found in three only. The usual condition disclosed by physical examination of the abdomen was a large liver, smooth and slightly irregular and hard, or sometimes simply that the liver was small and contracted.

The syphilitic liver, then, is liable to be mistaken clinically, and as a matter of fact is, I believe, frequently mistaken, for the alcoholic liver, an error which in view of the remedial power of anti-syphilitic remedies may be a disastrous one. Let me repeat that one helpful symptom in such cases is the existence of signs of perihepatitis, pain, and tenderness over the liver, and pyrexia. When these exist in marked degree and are at allpersis'ent they afford a presumption in spreads through the lobule between the cells in a diffuse and characteristic manner. There may be no thickening of the capsule or external change perceptible.

In eight cases of cirrhosis in children between five and nine years of age of which I have careful records there was a reliable history of congenital syphilis in two only. In two there was one of alcoholism and in the remaining four no cause could be made out. In connexion with this subject of cirrhosis in children there are many interesting points—such as the effect of congenital obliteration or stenosis of the bile-ducts as recorded by Dr. John Thomson,[20] the question of hereditary tendency as noted by Dr. Howard[21] and Dr. Finlayson,[22] and the connexion of this with nervous lesions. I think it is probable that congenital syphilis will furnish the key to the relation of these several conditions. With these matters, however, it is beside my present purpose to deal.

[20] Congenital Obliteration of the Bile Ducts, 1892.
[21] International Journal of Medical Scier ce, 1887
[22] Glasgow Hospital Reports, 1899.

The Goulstonian Lectures

ON

THE TYPHOID BACILLUS AND TYPHOID FEVER.

Delivered before the Royal College of Physicians of London on March 20th, 22nd, and 27th, 1900,

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LECTURE II.[1]

Delivered on March 22nd.

MR. PRESIDENT AND GENTLEMEN,—In my first lecture I discussed the bacteriology of an ordinary case of typhoid fever. To-day I desire to consider abnormal varieties of typhoid infection, and the relation which the bacillus bears to the chief complications and sequelæ of the disease. Before, however, passing to this subject it will be well to turn our attention for a short time to the question of relapses, for recent work enables us to offer at least a partial explanation of this interesting condition.

RELAPSES IN TYPHOID FEVER.

In the first place it must be allowed that a relapse is nothing less than a complete renewal of the primary disease. As a rule the whole cycle of changes met with in the first attack is again passed through. Thus fresh intestinal lesions are produced and a second generalisation of the bacilli occurs, as evidenced by the recurrence of the typical eruption. Indeed, the only difference which can be noticed between the attack and the relapse is that, as a rule, the duration of the latter is somewhat less than that of the former, though even in this respect exceptions are by no means uncommon. How, then, are we to explain this complete re-infection, at a time, too, when the protection acquired by the former attack has already begun to manifest itself? The experiments of Chantemesse and Widal and of Sanarelli throw light on the matter.

It is well known that the typhoid bacillus, whether isolated from the tissues after death or obtained from the stools or urine during life, has, for animals at least, but a low degree of virulence. If injected in large quantities into the peritoneal cavity of a guinea-pig it is capable of causing death; subcutaneously, however, as a rule it is without effect. Chantemesse and Widal,[2] however, show that if in addition to injecting the bacillus subcutaneously the toxines of the streptococcus pyogenes are injected intra-peritoneally, then the virulence of the typhoid bacillus becomes greatly increased, so that after several such passages the typhoid bacillus finally becomes so pathogenic that even by itself, without the aid of streptococcus toxine, a small quantity injected under the skin is sufficient to cause death within 24 hours from general typhoid septicæmia.

The toxines of the streptococcus, however, are not the only soluble poisons which, by diminishing the resistance of the organism, allow of the rapid growth and increased virulence of the typhoid bacillus. The toxines of bacillus coli and bacillus proteus vulgaris may be used instead, as Sanarelli[3] has shown. Now it is noticeable that these very micro-organisms, the toxines of which when absorbed so assist the growth and further the generalisation of the typhoid bacillus, are normal inhabitants of the human intestine. In addition, it is known that during typhoid fever they themselves, and especially the bacillus coli, rapidly increase in number, while their virulence becomes greater.[4] Lastly, in many cases of the disease their toxines *are* absorbed, for, as I shall show, it is by no means uncommon to find that the blood of a typhoid patient is also agglutinated by the bacillus enteritidis, while Lorrain Smith[5] has shown the same to be true for other varieties of bacillus coli, evidently proving that the toxines of these bacilli have been absorbed into the system.

It is evident, then, that these facts offer us a clue whereby to explain the occurrence of relapses. If in a given case at the end of the attack the immunising properties have been as yet but poorly acquired, only just in sufficient degree to destroy the majority of the bacilli but leaving others intact, and if under these circumstances a further absorption of toxines from the alimentary canal should take place, then we shall have all the conditions which will enable the typhoid bacilli to acquire fresh virulence and to re-invade the organism.

Further, the experiments of Sanarelli,[6] if they should be fully confirmed, seem to lift this view from the domain of theory into that of fact. Thus Sanarelli showed that it is quite easy to produce experimentally a relapse of the acute septicæmic typhoid fever from which animals in general suffer. All that is necessary is to inject into a guinea-pig at first a dose not quite sufficient to be fatal. The animal recovers, but for some time afterwards attenuated typhoid bacilli may still be found in the purulent focus at the seat of inoculation. If, now, in this condition a dose of toxines, either of bacillus coli or of bacillus proteus vulgaris, be injected into the peritoneum, the typhoid bacilli at once acquire fresh virulence, the organism is invaded afresh, and the animal dies from acute experimental typhoid fever. More important still, on two occasions he was able to determine such a relapse by injecting small quantities of the toxine into the stomach and so into the intestines, thus exactly reproducing the conditions occurring in the human subject.

It would seem, then, probable that auto-intoxication plays a very important part in the causation of relapses—a consideration, be it remarked, in favour of the antiseptic treatment of the disease and one which also emphasises the wisdom of the common practice of withholding solid food for some considerable time after the normal temperature has been reached. If this be given too early, before the digestive juices have recovered their full power, marked fermentative changes would be likely to occur in the undigested mass and thus the conditions favouring a relapse would arise.

Is, however, the rôle played by auto-intoxication limited to its connexion with relapses? May it not be of equal or even greater importance, as indeed Chantemesse and Widal suggest, in determining the primary disease? The knowledge which we now possess concerning the enormous numbers of bacilli which may be excreted from a patient suffering from typhoid fever renders it more and more evident that the typhoid bacillus is not the only factor necessary for the production of typhoid fever. Were it so no one should escape, least of all those who work at the disease. To originate the fever other factors must coöperate after the introduction of the bacillus. The gastric juice has no power to destroy the micro-organism and it therefore always passes into the intestine, and yet typhoid fever, as we see in cases of epidemics, by no means always results. May it not be that, in some cases at least, disease only follows when as the result of some trifling derangement of the bowel the soil has already been prepared by the absorption of toxic products or, in other words, by auto-intoxication?

TYPHOID FEVER WITHOUT INTESTINAL LESIONS.

In my first lecture, after discussing the relation which the bacillus bore to an ordinary case of typhoid fever, I showed that the evidence pointed convincingly to the view that the disease was really of the nature of a septicæmia—modified septicæmia, it is true, in that in nearly all cases the primary lesion is in a definite situation, but septicæmia none the less, in that in all cases the generalisation of the bacilli through the blood takes place, with the subsequent growth of the organism in the most diverse organs of the body. Closely connected with this more modern view of the disease is a question which has lately been exciting much interest, whether, namely, it is possible to have typhoid fever without intestinal lesions—to have, in fact, a typhoid septicæmia without a marked primary focus of disease. Evidently, from what has been said, there would seem to be nothing to prevent such a variety of the disease occurring. Indeed, we might go further and say even that we might expect it. The question is one which can only be settled finally by bacteriology, but it should not be forgotten that in reality this is no new idea. It is, indeed, as old as our knowledge of

[1] Lecture I. was published in THE LANCET of March 24th, 1900.
[2] Annales de l'Institut Pasteur, 1892, p. 759.
[3] Ibid., p. 725.
[4] Ibid., 1894, p. 214.
[5] Brit. Med. Jour., Jan. 28th, 1899.
[6] Annales de l'Institut Pasteur, 1892, p. 741.

typhoid fever itself. Thus Louis[7] records among his cases one (Observation 52) in which, while clinically the case seemed undoubtedly one of typhoid fever, yet post mortem there were no intestinal lesions. It is true that he himself refused to believe that this and similar cases were really typhoid fever, but such was not the opinion of all his contemporaries. Since the time of Louis, also, many similar cases have been reported from time to time, and of late years a certain number with bacteriological examinations. In all some 18 of the latter have now been described. Of these a considerable number, especially those of earlier date, have to be excluded for our present purpose, since the tests applied to the isolated bacilli were not sufficiently stringent. But even if we thus eliminate the cases of Vaillard,[8] Karlinski,[9] Vincent,[10] Beatty,[11] Pick,[12] Chiari and Kraus,[13] we are still left with others, which are almost certainly representatives of this group, such as, for example, those described by Du Cazal,[14] by Dr. Cheadle,[15] by Dr. Bryant,[16] by Flexner and Harris,[17] and finally by Lartigau.[18] In these cases the patients, after having suffered during life from a disease resembling typhoid fever, presented no intestinal lesions post mortem, but the typhoid bacillus was recovered from many of their organs and often from the blood of the heart as well. It is true that in none of these cases was the reaction of the isolated bacillus to high dilutions of typhoid serum investigated. Dilutions of 1 in 20, of 1 in 50, and of 1 in 100 have been made by different observers, but not higher, and a possible source of error has thereby been introduced. Still, remembering that we are not dealing with a single case but with a series of cases all of which present more or less similar characters, remembering, too, that during life these patients have often presented the typical symptoms of typhoid fever, including the presence of rose spots, and bearing in mind that some at least of them have evidently been exposed to typhoid infection, other members of the family being ill with typhoid fever at the same time, there cannot be any moral doubt that the bacilli found were in truth the typhoid bacilli and that this variety of typhoid fever does really exist. That it is uncommon is proved by the fact that at St. Bartholomew's Hospital no case has occurred during the last three years, though Widal examinations have been made in all suspicious cases as a matter of routine, and therefore such a case if it had occurred could not have been overlooked.

It is interesting to speculate on the entry of the bacillus in these cases. In this connexion an important fact strikes one on reading the records of the post-mortem examinations. It is that, though in all cases the intestine is described as being quite natural, yet in nearly all we find that the mesenteric glands were affected, being for the most part enlarged, swollen, and reddened, very much indeed as we find them in ordinary cases of typhoid fever. This would seem to suggest strongly that in these cases also the bacilli commonly enter the body through the intestine, passing, however, directly through the intestinal wall into the lymphatic glands, where they germinate and whence they become generalised as usual. The passage of micro-organisms such as bacillus coli through an apparently healthy intestinal wall is by no means uncommon. There is no reason, therefore, to doubt that a similar passage might be sometimes effected by the typhoid bacillus.

There would seem, then, to be the strongest evidence in favour of the view that sometimes, though rarely, the typhoid bacillus may pass into the blood and become generalised in the organs, just as occurs in ordinary typhoid fever, but without first causing any intestinal disease, even though, as is probable, the bacilli enter through the intestinal tract.

TYPHOID FEVER IN THE FŒTUS.

In connexion with this class of cases it is interesting to notice that a very similar form of the disease is by no means uncommon in the fœtus. Indeed, fœtal typhoid fever of the primary septicæmic type is a frequent, though by no means the only, cause of the abortion which so commonly occurs during the disease. Experimentally it was shown many years ago by Chantemesse and Widal[19] that the placenta formed no bar to the typhoid bacillus, and at the present time a considerable number of cases are on record in which the micro-organism has been found in the human fœtus. One of the most interesting of these is the following, observed by Dr. Andrewes, in the case of a fœtus from a woman suffering from typhoid fever, who aborted in the fourth month during the epidemic at King's Lynn. The typhoid bacillus in this instance was found in pure culture in the heart's blood and also in the spleen. Morphologically (including flagella) and culturally in all respects it resembled the typhoid bacillus while its agglutinable qualities were so marked that for a time it was used as the laboratory standard culture.

It should be noted, too, that in these cases, though the bacillus may be found in the blood and in many of the internal organs, the intestine is always natural (Étienne,[20] Freund and Lévy,[21] and Janiszewski[22]), and this indeed is what we might expect, seeing that the bacilli having broken through the placental barrier pass directly into the circulating blood without coming first in contact with the alimentary canal. Typhoid fever, then, in the fœtus is an example of a primary typhoid septicæmia.

LOCAL TYPHOID INFECTION.

We have seen, then, firstly that ordinary typhoid fever consists in a primary intestinal lesion followed by a secondary generalisation of the bacilli, and, secondly, that cases may occur, very similar, clinically, in which the septicæmia is present but in which the primary focus of disease is wanting. We may now ask ourselves whether it is possible for the typhoid bacillus to produce merely a local disease without there being any symptom of general infection at all. Analogy would lead us to believe that this might be possible. Thus the pneumococcus is the specific cause of acute pneumonia, but sometimes it may produce a fatal septicæmia, and, again, in other cases it may give rise to merely a local disease such as an otitis media. As regards the first two lesions, therefore, it presents an almost exact parallel with the typhoid bacillus, and we have now to ask whether the parallel may not be drawn yet closer by an agreement on the third point. Experimentally in the lower animals there is no doubt that this is the case. Thus it has been shown by Dmochowski and Janowski[23] that in dogs and guinea-pigs, if a subcutaneous injection of typhoid bacilli be made under certain conditions no general disease follows but merely a localised abscess. We might, therefore, expect that occasionally in man a similar result might occur if from any cause the general resistance of the organism to the typhoid bacillus be increased. Two cases at least of this kind have been described and probably a third, two being examples of cholecystitis and one of cystitis. The first case to which I may refer is that of Dr. Cushing.[24] The patient was a woman, aged 26 years, who, with the exception of an attack of pneumonia 10 years before, had never had any illness whatever, the history being perfectly clear on this point. She was admitted into the hospital with pain in the right hypochondrium which had attacked her five days before and had continued since. Her temperature was 101° F., but it fell the next day to normal and remained down. The total duration of the fever therefore could not have been more than seven days at the most. The pain soon left her and a tumour, which proved to be the enlarged gall-bladder, was then felt. A fortnight later, the patient continuing well, abdominal section was performed and the gall-bladder was found enlarged, inflamed, and containing 15 stones. The typhoid bacillus was found in pure culture in the contents of the gall-bladder. The patient made a rapid recovery. Here then we have a case of typhoidal cholelithiasis and cholecystitis, but without any evidence of typhoid fever, such as we understand it, having occurred at any time.

The case recorded by Dr. T. Houston[25] is also very similar.

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[7] Recherches sur la Fièvre Typhoïde, deuxième édition, tome ii., p. 301.
[8] La Semaine Médicale, March, 1890, p. 94; Bulletins et Mémoires de la Société Médicale des Hôpitaux de Paris, 1890, p. 201.
[9] Wiener Medicinische Wochenschrift, 1891, pp. 470 and 511.
[10] Annales de l'Institut Pasteur, 1893.
[11] Brit. Med. Jour., January, 1897, p. 148.
[12] Wiener Klinische Wochenschrift, 1897, No. 4., pp. 82 to 86.
[13] Zeitschrift für Heilkunde, xviii., p. 471.
[14] Bulletins et Mémoires de la Société Médicale des Hôpitaux de Paris, 1893.
[15] THE LANCET, July 31st, 1897, p. 254.
[16] Brit. Med. Jour., April 1st, 1899.
[17] Johns Hopkins Hospital Bulletin, 1897, p. 259.
[18] Ibid., April, 1899, p. 55.
[19] Archives de Physiologie, 1887, p. 270.
[20] Gazette Hebdomadaire, 1896, p. 184.
[21] Berliner Klinische Wochenschrift, 1895, p. 539.
[22] Münchener Medicinische Wochenschrift, 1893, p. 705.
[23] Ziegler's Beiträge zur Pathologischen Anatomie, 1895, Band xvii., Heft 2, p. 221.
[24] Johns Hopkins Hospital Bulletin, May, 1898.
[25] Brit. Med. Jour., 1899, vol. i., p. 79.

In this case the patient had suffered for three years from symptoms of cystitis. The trouble began soon after she had been nursing a child who had died from "diarrhœa," but she herself had never had at any time any illness to suggest typhoid fever. After the symptoms had lasted for three years a bacteriological examination of the urine was made. It was found to be acid, to contain some pus and typhoid bacilli in pure culture.

In the third case, one of cholecystitis, recorded by Hunner,[26] the patient's symptoms, mostly attacks of severe pain in the right hypochondrium, had lasted on and off for some three and a half years. Operation was at last performed and the gall-bladder was found to be greatly distended and to contain pus. Typhoid bacilli were obtained in pure culture from the latter. In this case, however, the patient had had what she described as "remittent fever" 18 years before, so that it is conceivable that we are here dealing with a case of prolonged retention of typhoid bacilli within the body and not a local infection. The evidence, however, seems to point to the latter.

These cases, then, lend support to the view that the typhoid bacillus is capable of causing sometimes merely a

TABLE V.—SHOWING THE RELATIVE FREQUENCY OF THE VARIOUS COMPLICATIONS OF TYPHOID FEVER AS THEY OCCURRED IN THE FATAL CASES EXAMINED AT ST. BARTHOLOMEW'S HOSPITAL DURING THE PAST 30 YEARS.

Condition found post mortem.	Actual frequency of the condition.	Frequency per cent.
SKIN, MUSCLES, PAROTID, THYROID		
(Number of times examined, 300).		
Purpura	8	2·66
Jaundice	2	0·66
Bedsores	14	4·66
Parotitis, purulent	1	0·33
Goitre	3	1·00
Hæmorrhage into rectus muscle	1	0·33
Idem with abscess	1	0·33
BRAIN		
(Number of times examined, 117).		
Natural	107	91·45
Engorged	4	3·42
Blanched	4	3·42
Ecchymosed	1	0·85
Meningitis	1	0·85
EARS (INT.)		
(Number of times examined, 25).		
Natural	16	64·0
Otitis media	9	36·0
HEART		
(Number of times examined, 290).		
Muscle, (*a*) natural	196	67·58
(*b*) parenchymatous degeneration, muscle soft and flabby	83	28·62
(*c*) fatty degeneration	7	2·41
Endocarditis (not rheumatic)	4	1·37
Recent endocarditis in old rheumatic subjects	2	0·68
Pericarditis	2	0·68
Ante-mortem clot in ventricle	1	0·34
Old morbus cordis	5	1·72
Thrombosis, pulmonary artery	1	0·34
Phlebitis	1	0·34
AORTA		
(Number of times examined, 171).		
Natural	143	83·62
"Atheromatous patches"	28	16·37
LARYNX		
(Number of times examined, 165).		
Natural	115	69·69
Inflamed (not ulcerated)	7	4·24
Ulcerated	42	25·45
Diphtheritic membrane	1	0·60
Perichondritis	6	3·63
(Edema of the glottis	—	—
PHARYNX		
Ulcerated	5	—
(ŒSOPHAGUS		
(Number of times examined, 178).		
Natural	177	99·43
Ulcerated	1	0·56
LUNGS		
(Number of times examined, 285).		
Natural	89	30·16
Congested	75	25·42
(Edema	49	16·61
Congestion and œdema	29	9·83
Bronchitis (severe but without broncho-pneumonia)	8	2·71
Broncho-pneumonia	23	7·79
Lobar pneumonia	13	4·4
Hypostatic pneumonia	4	1·35
Subpleural hæmorrhage	6	2·03
Pleurisy—		
(*a*) Dry	16	5·42
(1) Primary	5	1·69
(2) Secondary to other pulmonary complications	11	3·72
(*b*) With effusion	12	4·06
(1) Primary	9	3·05
(2) Secondary to other pulmonary complications	3	1·01
LUNGS (*continued*).		
Empyema	3	1·01
Abscess	2	0·67
Infarct, hæmorrhagic	3	1·01
" septic	1	0·33
Gangrene	1	0·33
Active phthisis	3	1·01
INTESTINES AND PERITONEUM		
(Number of times examined, 300).		
Ulceration of large intestine	105	35·00
Idem, extensive	35	11·66
Appendix—		
Condition noted	26	—
Natural	15	57·69
Ulcerated	11	42·30
Perforation of the intestine	94	31·33
General peritonitis from perforation	92	30·66
Localised peritonitis from perforation	1	0·33
Localised peritonitis from perforation with abscess formation	1	0·33
General peritonitis without perforation	13	4·33
Fatal intestinal hæmorrhage	23	7·66
Ascaris lumbricoides	2	0·66
Tapeworm	1	0·33
STOMACH		
(Number of times examined, 242).		
Natural or slightly engorged	234	96·69
Ecchymosed	6	2·47
Ulcerated	2	0·82
MESENTERIC GLANDS		
(Number of times examined, 256).		
Abscess of	17	6·25
Sloughing of	1	0·39
Caseous degeneration (no other evidence of tubercle)	7	2·73
SPLEEN		
(Number of times examined, 292).		
Infarcts	9	3·08
LIVER		
(Number of times examined, 290).		
Natural	186	64·13
"Cloudy"	73	25·17
Fatty	28	9·65
Abscess	2	0·68
Suppuration of bile-ducts and impacted stone	1	0·34
GALL-BLADDER		
(Number of times examined, 57).		
Natural	54	94·73
Ulcerated	1	1·75
Catarrh of	1	1·75
Suppuration of (impacted stone)	1	1·75
PANCREAS		
(Number of times examined, 175).		
Natural	166	94·85
"Large and soft"	9	5·14
SUPRARENALS		
(Number of times examined, 141).		
Natural	141	100·0
KIDNEYS		
(Number of times examined, 289).		
Natural	152	52·59
"Cloudy swelling"	111	38·40
Congestion	19	6·57
Simple infarct	1	0·34
Septic infarct; abscess	1	0·34
"Acute nephritis"	1	0·34
Pyelitis	1	0·34
BLADDER		
(Number of times examined, 141).		
"Natural"	134	95·03
Cystitis	7	4·96

Note.—Every complication which was observed has been classified in the Table. Any unusual complication not mentioned may therefore be regarded as not having occurred in this series of cases.

[26] Johns Hopkins Hospital Bulletin, August and September, 1899.

local disease, and it is probable that with the increasing number of careful bacteriological examinations now being made similar cases will soon be described.

COMPLICATIONS OF TYPHOID FEVER.

We may now pass from typhoid fever itself to a consideration of the complications and sequelæ which occur so frequently in connexion with it and which form so important a part of the disease. In considering them it was impossible not to be struck with the fact that we have no very comprehensive data concerning their frequency in England, none, at all events, comparable to those collected by foreign observers, and since there is no doubt that in different countries the relative frequency of various complications differs much it seemed that it would be of interest to analyse the results of the post-mortem examinations in cases of typhoid fever which have occurred at St. Bartholomew's Hospital during the past 30 years. The results are given in Table V. In all 300 post-mortem examinations have been analysed, but, all the viscera not having been examined in each case, the percentages often depend on a smaller number. This, however, is noted in the table.

If, now, these results be compared with those of other observers as, for example, with the elaborate statistics obtained by Hölscher[27] from the Munich records, it will at once be seen that whilst some of the figures agree well together others show the most extraordinary differences. Thus, to name a few, while broncho-pneumonia, empyema, and meningitis seem to occur as frequently in London as in Munich in connexion with typhoid fever, ulceration of the larynx is nearly five times more frequent in London, while perforation occurs in 30·6 per cent. of our cases as compared with only 5·7 per cent. in Munich. In London, that is to say, nearly one out of every three fatal cases is due to perforation; in Munich only one in 17—a truly extraordinary difference. On what exactly these great variations depend it is difficult in all cases to say, but the figures obtained at any rate clearly show the danger of believing that foreign statistics may represent even approximately the condition of affairs at home.

In considering the complications of typhoid fever one is naturally tempted to try to divide them into two great groups according as they are truly typhoidal—produced, that is to say, by the typhoid bacillus—or merely the result of a secondary infection by the pyogenic cocci. This, however, is impracticable, for, as we shall see, it is not uncommon for a given complication to be in one case homologous and in another heterologous in nature. Nevertheless certain complications are especially associated with the typhoid bacillus, and to a consideration of them I now propose to turn.

NERVOUS SYSTEM.

Meningitis.—Two complications referable to the nervous system may occur in typhoid fever, meningitis and neuritis. Both agree in being uncommon, both, too, in being truly typhoidal. The rarity of meningitis is well shown by the fact that it only occurred once in 117 cases at St. Bartholomew's Hospital, the Munich records also in this case giving a very similar percentage. From the literature Keen[28] has collected 15 cases in which a bacteriological examination was made, and in all of them the typhoid bacillus was described as being present in the meninges and the meningeal exudation and in a considerable proportion in pure culture. Some of the cases doubtless are open to criticism, but the later ones, and especially one by Ohlmacher,[29] have been carefully worked out and may be accepted. Meningitis, then, occurring in typhoid fever, unless it be secondary to otitis media, should for the most part be regarded as directly caused by the typhoid bacillus, and to typhoid fever so complicated the term "meningo-typhoid" may be justly applied. It should be noticed, also, that in these cases the usual clinical symptoms of meningitis, strabismus and opisthotonos, are not as a rule present, but simply delirium or profound unconsciousness and coma. It is probable, too, that if the meninges were examined more frequently, especially in cases with severe nervous symptoms, the typhoid bacillus would be found not infrequently in this situation even in the absence of definite meningitis.

Neuritis.—The pathology of neuritis occurring after typhoid fever was not at first so clear. Thus it had been found by Dr. Sidney Martin[30] impossible to produce an artificial neuritis in animals by the injection of typhoid toxines, even though these were powerful enough to give rise to fatty degeneration of the heart and to kill the animals. It was conceivable, therefore, that it might be due to some secondary infection. Recently, however, Nicholls[31] in a very careful paper has shown in the case of the rabbit, that if the bacilli themselves be injected and the dose of poison thereby be greatly increased, then neuritis follows. Experimentally, then, the typhoid poison is capable of producing neuritis, and there seems no reason to doubt that when this complication occurs in man it is in general due to a similar cause.

RESPIRATORY SYSTEM.

The complications affecting the respiratory system in typhoid fever are numerous. Among the most important we may class ulceration of the larynx, bronchitis, and pneumonia, both lobar and lobular. Of these, bronchitis and broncho-pneumonia need not detain us long, for though of very great importance clinically their pathology seems clear. They are examples of a secondary infection and are produced by the rapid growth under the influence of the fever of the pneumococci, streptococci, and staphylococci, normally present in the respiratory tract.[32]

Ulceration of the larynx.—Ulceration of the larynx, however, deserves a more special mention, both on account of its frequency (it occurred in 25 per cent. of our post-mortem examinations) and also because the condition was for long regarded as a specific part of the disease, the ulcers being looked upon as directly caused by the typhoid bacillus, in exactly the same way as are the ulcers of the intestine. The observations, however, upon which this view depended were made at a time when the widespread distribution of bacillus coli communis was unsuspected, and therefore cannot be relied upon. Moreover, the late Professor Kanthack and Dr. Drysdale,[33] in their interesting paper on this subject, showed how unlikely such a view was and how much more probable it was that the laryngeal ulcers were due to secondary infection, the tissues being predisposed by the disease itself. The accuracy of this view also has been strongly supported by the fact that since their paper was written no recent observer has discovered the typhoid bacillus in the ulcerations, though bacillus coli, streptococci, and other micro-organisms have been found. There is little doubt, then, that the complication is not really specific but due to the pyogenic micro-organisms.

Lobar pneumonia.—We may now consider the pathology of lobar pneumonia occurring in typhoid fever, a complication probably rather more frequent than is generally supposed, it having occurred in nearly 5 per cent. of our fatal cases. It has been argued by some that, in certain cases at least, this complication is directly produced by the typhoid bacillus, while others hold that in all cases the pneumococcus is responsible for it, whether the pneumonia occur quite at the commencement of the typhoid fever or during its course. The matter is not a very easy one to settle finally. In the first place, it must be allowed that the typhoid bacillus may be found sometimes in the lungs even in large numbers, just as it may be found in other organs. Thus in a recent case in which infarction of the lung had occurred I obtained a pure culture of the bacillus from the infarct itself, the heart's blood, however, being sterile. There would therefore be nothing improbable in finding the specific bacilli in the consolidated lung, though this alone, of course, would not prove that they stood in causal relation with the pneumonia. In the second place, it is beyond question that in a great majority of the cases the pneumococcus is found in the lung, either alone or more rarely associated with the typhoid bacillus. This is generally admitted, and as an example it may be added that in two cases which have occurred recently at St. Bartholomew's Hospital the pneumococcus was on each occasion present, the typhoid bacillus not being found in the lung. Whenever, then, the pneumococcus is present we must attribute to it without hesitation the pneumonia, and must assume that the typhoid bacillus is present only in a secondary capacity, just as it may occur sometimes

[27] Münchener Medicinische Wochenschrift, 1891, p. 45.
[28] The Surgical Complications and Sequels of Typhoid Fever, London, 1898.
[29] Journal of the American Medical Association, 1897, p. 419.
[30] Croonian Lectures, THE LANCET, 1898, vol. i., pp. 1665 and 1737, vol. ii., pp. 1 and 71.
[31] Journal of Experimental Medicine, vol. iv., 1899, p. 189.
[32] Horton-Smith: St. Bartholomew's Hospital Reports, 1897, p. 46.
[33] Ibid., 1895.

in an infarct or in a fairly normal lung. As a result, then, we must allow that without doubt the great majority of typhoid pneumonias are due to the action of the pneumococcus. A few cases, however, are on record in which the typhoid bacillus has been found in culture but in which the pneumococcus has not been obtained, in one case at least, even after the inoculation of a mouse, the most certain test for the presence of the organism. It has, therefore, been hastily assumed that in these cases at all events we have to do with true typhoidal pneumonia. If, however, these cases be carefully investigated it will be seen that, as Karlinski originally pointed out, those cases in which the pneumococcus was not found were only examined quite late in the disease, at a time when commonly this micro-organism has already disappeared. In the very interesting case recorded by Bensaude,[34] for example, in which the patient had all the symptoms and physical signs of an initial pneumonia passing directly into typhoid fever, the exploratory puncture of the lung was only made on the tenth day. The fact, therefore, that only the typhoid bacillus could be grown from the exudation withdrawn while the pneumococcus could not be found, has but little weight. Similarly in the case recorded by Flexner and Harris[35] the patient had been ill for about two months, and from the history it would seem probable that the pneumonia started about two weeks before death. The absence here again of the pneumococcus has but little significance. At the present moment, then, we may say that no evidence exists to show that true lobar pneumonia is ever the result of the action of the typhoid bacillus. The future may conceivably reveal such cases, but before we can accept them two things are necessary: the bacteriological examination must be made early in the disease and several cultures from various parts of the diseased lung must be made. The absence of the pneumococcus, in fact, must be clearly demonstrated, not merely taken for granted as it were. If, then, the term "pneumo-typhoide," so commonly used by French writers, be retained, it must be understood that reference is merely made to cases of typhoid fever complicated by pneumonia, and that the term does not imply that the pneumonia is typhoidal. Probably, therefore, at present it would be wiser not to use the term. Similarly with regard to the term "pleuro-typhoide." A few old observations are on record in which apparently the first sign of the typhoid fever was a pleural effusion, and in one case Valentini,[36] and in a second Fernet and Girode,[37] isolated, as they thought, the typhoid bacillus in pure culture. Recent observations, however, have not confirmed this discovery, so that if the term be retained it must be merely as a clinical expression and must not at present be taken to imply a localisation of the typhoid bacillus in the pleura.

CARDIO-VASCULAR SYSTEM.

With the exception of phlebitis the complications referable to the heart and blood-vessels in typhoid fever are very rare, and even phlebitis in fatal cases is most uncommon. Thus in the last 30 years at St. Bartholomew's Hospital only four cases with endocarditis have come to necropsy, two with pericarditis, and one with phlebitis. The cases in which arteritis leading to gangrene has occurred have all ended in recovery. As yet the pathology of these affections is somewhat obscure.

Endocarditis.—It may be said, however, that the endocarditis is generally of the malignant type and that it is the result of a secondary infection. This, however, is not so always, for the typhoid bacillus has been found in the warty vegetations. In one case observed by the late Professor Kanthack it was so found, not however in this case alone, but in conjunction with the pyogenic cocci.

Arteritis.—Of arteritis, the common cause of that dreaded though fortunately very rare complication, spontaneous gangrene, it is difficult to speak with certainty, owing to the extreme difficulty in obtaining material. In a recent case of typhoidal meningitis, however, described by Ohlmacher,[38] produced by the presence of the typhoid bacillus, marked acute endarteritis of the meningeal vessels was found. It is, therefore, probable that when the affection attacks the peripheral vessels it may have a similar pathology and may be due directly to the specific micro-organisms, or their toxines, and not to any secondary infection. It is likely, too, that if the state of the peripheral vessels were more carefully and frequently examined a mild degree of the condition would not uncommonly be found.

Phlebitis.—With regard to phlebitis a considerable number of recent observations have been made (Vincent[39]) and in many of the cases streptococci and staphylococci have been found in the clot and vessel walls, suggesting that the inflammation is really septic in nature, though probably produced by micro-organisms with but a low degree of virulence.

URINARY SYSTEM.

Nephritis.—The exact relation which the typhoid bacillus bears to the nephritis which in varying degrees of severity occurs so commonly in typhoid fever is hard to decide. It is certainly true that the typhoid bacillus may be present in the kidney after death in cases which show some evidence of nephritis, but lesions similar or even more severe frequently occur in cases in which the kidneys are sterile and in which therefore nephritis is evidently due to the excretion of toxic substances produced either by the typhoid bacillus alone or combined with those of other micro-organisms in cases where a secondary infection has occurred. Melchior[40] thus in his monograph records three cases of nephritis in which casts were found in the urine but in which in two cases the urine was sterile during life, showing that the kidneys could not have harboured the bacillus, while in the third case, which ended fatally, cultures proved the absence of the bacillus in the kidneys after death. The conclusion at which we may arrive, then, is that nephritis in typhoid fever is no proof of the presence of the bacillus in the kidneys. The toxines of the typhoid bacillus alone (or in combination with those of other micro-organisms) are quite sufficient to account for the majority of cases of nephritis which occur in typhoid fever. In some cases, however, in addition the bacillus may be present in the kidneys and will tend therefore to aggravate the condition.

Nephritis directly produced by the typhoid bacillus.—Very occasionally, indeed, cases of typhoid fever do occur, complicated by marked nephritis, in which it seems that the inflammation is directly produced by the local growth of the bacillus. The best known case of the kind is that reported by Thue[41] as early as 1889, in which on the thirteenth day the patient was found to be suffering from hæmorrhagic nephritis and in which post mortem the typhoid bacillus, as it was believed, was found in pure culture in the spleen and kidneys. The date of this observation, however, forbids us to place implicit confidence in it. Recently, however, a somewhat similar case has occurred at St. Bartholomew's Hospital. The patient, a man aged 22 years, who was under the care of Dr. Hensley, was taken ill on Dec. 21st, 1899, with pain and difficulty in micturition. He, however, continued his work until Dec. 30th, the ninth day of his illness. On Jan. 1st, 1900, he was admitted and was found to be suffering from typhoid fever (spots being present and the Widal reaction positive) and also nephritis. The urine contained blood, *very many casts*, a good deal of pus, and one-tenth of albumin. On Jan. 3rd (the thirteenth day) it was examined bacteriologically and was found to contain a pure cultivation of typhoid bacilli. The patient had a severe attack of fever, complicated by laryngitis. The temperature reached normal on the thirty-fourth day. The nephritis continued throughout the illness and the bacilli still persisted in the urine in undiminished numbers. (For exact details concerning the date and number of the observations made on the urine compare Table VI., Case 17*a*, and Appendix, Case X.) On the thirty-fifth day, the day after the temperature had reached normal, the urine under the administration of urotropin was freed from bacilli and the thick deposit of pus which had hitherto been present (typhoidal cystitis). After a few days, also, the casts became less and with the albumin gradually disappeared. It would seem, then, that in this case the nephritis stood in direct relation to the typhoid bacilli, for, apart from the striking effect of treatment, the improvement in the condition dating almost directly from the elimination of the bacilli, it seems difficult to ascribe so marked a nephritis observed on the eleventh day, and undoubtedly present earlier, to toxines only. Moreover, the bacilli were evidently present in the urine and kidneys from a very early period of the disease. They were cultivated

[34] Thèse de Paris, 1897, p. 115.
[35] Johns Hopkins Hospital Bulletin, December, 1897.
[36] Berliner Klinische Wochenschrift, 1889, p. 368.
[37] Bulletins et Mémoires de la Société Médicale des Hôpitaux de Paris, 1891, p. 236.
[38] Loc. cit., vide note 29.
[39] La Semaine Médicale, 1895, p. 377.
[40] Cystitis und Urininfection, Berlin, 1897.
[41] Charcot: Traité de Médecine, tome i., p. 775.

first on the thirteenth day, but the first symptom which drew the patient's attention to his condition was some pain and difficulty in micturition, due doubtless to typhoidal cystitis, and evidencing the presence of the micro-organisms even at this earlier stage. For these reasons, then, we must regard the case as one of true typhoidal nephritis, or in its truest sense one of "nephro-typhoid." The extremely early date at which the generalisation of the bacilli must have occurred is of great interest.

TYPHOID BACILLURIA AND CYSTITIS.

I may now pass to the bladder and the urine in typhoid fever. In drawing attention to the presence of the bacilli in the urine some little time ago[42] I was only able to prove without doubt the existence of the condition and could not venture at that time to state how frequent its occurrence might be. Lately, however, I have had the opportunity of examining a larger series of cases and the results of my observations I now bring forward. They are recorded in Table VI. It will be seen from it that in all 45 cases of typhoid fever have been investigated. In 28 of these, though examined on several occasions, the urine was never found to contain typhoid bacilli, while in 17 the bacilli were found. This would give apparently a percentage of nearly 38 for the positive results. It is, however, undoubtedly too high, for out of the 17 positive results six were cases in which the abnormal condition of the urine had attracted attention and in which a bacteriological examination was therefore requested. Eliminating these, then, we find that 39 typhoid fever cases have been taken at random in the wards and the urine examined on several occasions. Of these cases 28 never contained typhoid bacilli, while 11 contained them in large quantities, constituting a percentage of 28. In London, then, at all events it will probably be correct to say that at least 25 per cent. of all cases present this serious and dangerous condition. This conclusion is also supported by the fact that it agrees approximately with the results obtained by Richardson.[43] This observer, working in Boston, examined the urine in 102 cases of typhoid fever, and in 23 he was able to isolate the bacillus, obtaining therefore a percentage of 22·5. At the present time, then, the evidence would show that the condition is one frequently met with and that it probably occurs in one out of every four typhoid fever patients.

Naked-eye recognition of typhoid "bacteriuria."—An important point, also, in connexion with the condition is the fact that very commonly the bacilli are present in enormous numbers, so that the urine is rendered turbid. I was at first inclined to regard these cases as rare, but really they are the rule rather than the exception. Thus out of 14 recent cases in which this point was especially looked for, in 12 I found that the urine was turbid with bacilli, while in two only was it noted as "clear," and the microbes were accordingly first discovered on cultivation. The enormous numbers in which the micro-organisms may be present, though it increases the danger of the complication, brings with it the advantage that the condition can be recognised, or rather suspected, more easily. Indeed, this can often be effected by the naked eye. All that is necessary is to pour the turbid urine into a test tube and then holding it up to the light gently to shake it. If the turbidity be due to the presence of micro-organisms we notice at once a curious shimmer in the liquid exactly comparable to that seen in shaking any turbid broth culture, a phenomenon which is not seen when the urine is cloudy from other causes, such as phosphates, urates, &c., probably because the amorphous particles of which these deposits consist are unable to catch and reflect the light in the same way as the regularly shaped bodies of the bacteria. If, then, in a turbid typhoid urine this curious shimmer is seen it may at once be predicted that the urine is full of micro-organisms, and the typhoid bacillus should be at once suspected, for experience shows that when this condition is noticed in typhoid fever, *if the case be a male*, it is most commonly due to the presence of the true typhoid bacillus. This, however, can only be proved by cultivation, and even in the male the same naked-eye appearance may sometimes, though much less commonly, be produced by other microbes, such as the bacillus coli communis, the streptococcus pyogenes, and the staphylococcus aureus. In the female, however, much less reliance can be placed on a mere inspection of a naturally passed urine, the sources of contamination being too gross.

Conditions governing the appearance of the bacilli.—The conditions under which typhoid bacilluria occurs are subject to great variation. Thus, the bacilli may make their first appearance in the urine at any period of the disease, from the early days of the fever down to a time when convalescence is already established. The earliest date on which I have myself isolated them was the thirteenth day, and in this case they had undoubtedly been present from a much earlier period. The latest date, on the contrary, on which I have known them first to occur was the fourteenth day of convalescence. Speaking generally, however, we may say that the condition is rare before the third week of the disease. After this it may occur at any time during the fever, but not uncommonly its occurrence is delayed until the early days of convalescence. It is, therefore, much more closely associated with the later stages of the disease. The duration of the bacilluria also varies much, but it nearly always persists for some considerable time. The shortest duration recorded is eight days, but in four other cases it had not disappeared until after the lapse of 21 days, 25 days, 30 days, and 70 days. Occasionally it may persist, not for months, but for years, as in a remarkable case recorded by Gwyn.[44] In this case the patient had been in hospital five years before with an attack of typhoid fever. Ever since his discharge he had had trouble with his bladder, and on re-admission five years later he was found to be suffering from cystitis and the typhoid bacillus was obtained in pure culture from his urine.

Frequency of associated pyuria.—The condition of the urine, too, offers no constant qualities. Not uncommonly, even when millions of bacilli are present, albumin is totally absent, and when present it usually does not amount to more than a trace or a cloud. In rare cases it may be present in larger quantities—one-sixth or one-seventh in two of my cases. In one case hæmaturia occurred. Although, however, albuminuria is not conspicuous in these cases it is not at all uncommon to find pus, sometimes even in considerable quantities. Thus of my 17 cases nine, or over 50 per cent., showed pyuria. The urine in nearly all cases was acid. It was never ammoniacal.

Lastly, it has sometimes been said that the cases in which typhoid bacilluria occurs are more severe clinically than those not showing this condition. Taken as a whole this is true, but it is equally true that patients may have typhoid fever of extreme severity without the urine ever becoming infected. In no case, then, we can say from the condition of the patient or from the presence or absence of albuminuria that bacilluria has occurred. We should, however, suspect it if either the urine becomes suddenly turbid and manifests the "shimmer" appearance or if pyuria occurs.

THE PATHOLOGY OF THE CONDITION.

A few words may now be devoted to the pathology of this condition. How is the bacilluria produced and on what does it depend? The simplest explanation which suggests itself—namely, that we have to do with a mere filtration of the bacilli from the blood—may be at once dismissed. The extreme difficulty in finding the bacilli in the blood during life, to which I have already referred, would point to its improbability. Moreover, I have on four occasions examined the blood bacteriologically, at a time when the urine was swarming with bacilli, and on all occasions I failed to find the typhoid bacilli therein. Evidently we are not dealing with a mere filtration. A second possibility is that the condition arises from suppuration set up in the kidney by the typhoid bacillus, accompanied by the secondary passage of the bacilli and pus into the urine. Such cases of suppuration do undoubtedly occur, one being recently recorded by Flexner,[45] but they are extremely rare. Thus out of 289 typhoid post-mortem examinations at St. Bartholomew's Hospital in one case only were abscesses found in the kidneys. This rare condition, therefore, could hardly explain the very frequent presence of the bacilluria.

We are driven, then, to our third possibility to offer an adequate explanation of the condition. According to this view, which I believe to be correct, the whole would depend on the rapid growth of the bacillus in the urine itself within

[42] Transactions of the Royal Medical and Chirurgical Society, 1897.
[43] Journal of Experimental Medicine, vol. iii., May, 1898, and vol. iv., January, 1899.
[44] Johns Hopkins Hospital Bulletin, June, 1899, p. 109.
[45] Journal of Pathology and Bacteriology, 1895, vol. ii.

he bladder, a stray micro-organism having found its way there from the blood, doubtless after its passage through the kidney. This explanation would seem to meet the facts of the case, for it would explain the chief peculiarities of the condition—viz., the sudden onset of the affection, the enormous numbers of the micro-organisms, and not uncommonly the total absence of albuminuria. It would also readily explain the frequency of pyuria in these cases, which would be thus due to the onset of cystitis. It has, however, by some observers been doubted whether the typhoid bacillus can grow and multiply in urine. As a matter of fact, there is no doubt that it is able to do so. Thus I found that out of six samples of urine taken and inoculated with the typhoid bacillus and then incubated at 37° C. four showed general turbidity, though varying in degree, from growth of the micro-organism at the end of 18 hours, while two did not. These latter, however, showed good growth at the end of 48 hours. The typhoid bacillus evidently, then, can grow in most urines, though the rapidity of growth varies with the specimen of the urine used. On the latter fact also doubtless in part depends the absence of the bacilli in the urine in so many cases of typhoid fever. We must believe that in every case, since the bacilli always pass into the blood, every now and then a stray bacillus is carried into the kidney and so passes into the urine. If, however, the urine be in this case not very suitable to the growth of the micro-organism, and if, too, the bladder be evacuated frequently and completely, then no harm will result, for the micro-organism will be excreted in the urine before it has time to multiply. If, however, as is often the case in typhoid fever, the patient only passes his urine at long intervals, perhaps not emptying the bladder completely, then if the urine be a favourable medium the bacillus will have ample opportunities to grow and multiply, and marked infection of the urine will result.

In addition, however, to the above considerations we have positive evidence that the *fons et origo* of the condition lies in the bladder itself. In the first place, the condition can be cured by local treatment—viz., the injection of antiseptics into the bladder. This was shown very clearly by Richardson [46] who in a given case, having failed with boric acid, was at once successful when perchloride of mercury (1 in 7000) was substituted. Gwyn [47] also has had a similar experience. Secondly, a short time ago I had the opportunity of examining one of these cases post mortem. The

TABLE VI.—SHOWING THE FREQUENCY OF TYPHOID BACILLURIA AND THE PERIOD OF THE DISEASE AT WHICH IT OCCURS, BUT, EXCEPT IN THE FIRST TWO CASES, NOT ITS DURATION. IN THE REMAINDER, EXCLUDING THE THREE FATAL CASES, AFTER THE CONDITION HAD BEEN OBSERVED FOR A LONGER OR SHORTER PERIOD, IT WAS CUT SHORT BY TREATMENT (UROTROPIN).

Number of case.	Age of patient.	Sex.	Date on which cultivations from the urine were made.	Day on which the temperature reached normal.	Typhoid bacilli found.	Condition of the urine.	Remarks.
1	18	M.	10, 11, 13, 16, 19, 22, 25, 27, 31, 35, 39, 40, 41, 44, 46, 49, 51, 54, 58, 63.	41	39, 40, 41, 44, 46, 49, 51, 54, 58, 63.	Turbid with bacilli; sometimes a cloud of albumin; sometimes none.	A mild case of typhoid fever.
2	22	M.	39, 44, 47, 54, 58.	37	39, 44, 47.	Pyuria.	A severe case. The pyuria started suddenly on thirtieth day. Before this the urine had been natural.
3	18	M.	13, 15, 17, 23.	Fatal.	15, 17, 23.	Clear; no albumin.	Died on the twenty-third day from perforation.
4	18	M.	28.	,,	28.	—	Died on the twenty-eighth day with marked typhoid septicæmia.
5	31	M.	19.	,,	19.	Turbid with bacilli; one-seventh albumin.	Died on the nineteenth day from "heart failure."
6a[1]	29	F.	50 (R), 52 (R), 58.	56	50 (R), 52 (R).	Pyuria; turbid with bacilli.	A serious case of typhoid fever; the pyuria started suddenly on the fiftieth day. Before this the urine had been natural.
7a[2]	24	M.	18, 19, 20, 21, 28, 31, 32, 33, 37, 38, 41, 46, 56.	27	18, 28, 31, 32, 33, 37.	Pyuria; turbid with bacilli.	A serious case of typhoid fever.
8a[3]	21	M.	24, 26, 27, 35, 42, 54, 65.	28	24.	Clear; thick cloud of albumin.	A case of medium severity.
9	11	M.	19, 20, 21, 23, 24, 27, 48, 51.	30	19, 20, 21, 23, 24.	Turbid with bacilli; faint trace of albumin.	A serious case.
10a[4]	31	M.	23, 27, 28, 29, 32, 34, 37, 44.	31	23, 27, 28, 29.	Pyuria; turbid with bacilli.	A case of medium severity.
11a[5]	36	M.	30, 38, 45, 58, 59, 60, 61, 62, 65, 70, 76.	53	58, 59, 60.	Pyuria; turbid with bacilli.	,,
12a[6]	13	M.	29, 31, 32, 33, 34, 36, 39, 46.	27	29, 31, 32, 34.	Turbid with bacilli; trace of albumin.	,,
13b	32	M.	38, 41, 44.	24	38, 41.	Pyuria.	A case of medium severity. The pyuria was first noticed when the temperature had been normal 14 days. Before this the urine had been natural.
14a[7]	6	M.	33, 34, 35, 36, 37, 39, 42.	30	33, 34, 35, 36.	Pyuria; turbid with bacilli.	A very severe case. Hæmaturia and pyuria occurred suddenly when the temperature had been normal one day. Before this the urine had been natural.
15a[8]	20	M.	44 (R), 46 (R), 51 (R), 52, 53, 63.	51	46 (R), 51 (R).	Turbid with bacilli; faint cloud of albumin.	A very severe case.
16a[9]	42	M.	14, 21, 33, 46 (R), 61, 68, 69, 72, 78.	52	61, 68.	Pyuria; turbid with bacilli.	,,
17a[10]	22	M.	13, 16, 25, 32, 34, 35, 36, 37, 39, 41, 44, 46, 50, 55, 60, 65, 74.	34	13, 16, 25, 32, 34, 35.	Pyuria; turbid with bacilli; much albumin; casts.	A very severe case. The patient suffered from true typhoidal nephritis.

Duration of the bacilluria cut short by treatment.

a. For further details consult Appendix to Lecture III.; notes 1 to 10 give the numbers of the cases in the Appendix. [1] Case II. [2] Case III. [3] Case I. [4] Case IX. [5] Case IV. [6] Case VIII. [7] Case V. [8] Case VI. [9] Case VII. [10] Case X.

b. Observed by Dr. Andrewes.

(R) signifies that the observation was made during a relapse.

[46] Loc. cit., vide note 43.

[47] Loc. cit., vide note 44.

patient was a man, aged 31 years, who died on the nineteenth day of the disease from heart failure. The urine was examined a few hours before death and was found to contain one-seventh of albumin and to be strongly turbid with typhoid bacilli in pure culture. Death occurred a few hours later. At the post-mortem examination the usual intestinal lesions of typhoid fever were found. The Peyer's patches and solitary follicles were swollen and beginning to ulcerate. The spleen was enlarged and soft. The kidneys to the naked eye showed only engorgement and microscopically nothing beyond "cloudy swelling" could be demonstrated. The bladder, however, showed a few scattered hæmorrhages and its mucous membrane was slightly injected. Bacteriologically the typhoid bacilli were demonstrated by culture in the spleen, the liver, and the gall-bladder, as well as the bladder urine, but the cultures from the heart's blood, the lungs and both kidneys were sterile. I should say that four separate bacteriological examinations were made from the kidneys, two from each organ, but all four yielded absolutely negative results. In this perfectly typical case, then, there can be no doubt as to the source of the bacilli. They were not found in the blood or in the kidneys, but they were present in the urine in enormous numbers. There would seem therefore to be no reasonable doubt that a stray bacillus had passed into the urine and had multiplied there and so given rise to the condition.

If, then, this proves to be, as I believe, the true pathology of the affection we are evidently dealing with what may be called a specific "bacteriuria," meaning by this term that the urine is swarming with micro-organisms, though no definite symptoms are produced by this condition. This affection has been known for years. Indeed, it was the late Sir William Roberts[48] who first drew attention to it. His observations, however, did not attract general notice and it was not until 1894 that Krogius[49] again brought the matter forward. In the *Annales Génito-Urinaires* for that year he published eight cases of this condition all due to the presence of bacillus coli communis, and since this date other writers have confirmed his observations. Indeed, the condition is almost certainly more common than is generally imagined.

TABLE VI.—(*continued*).

Negative Cases.

Number of case.	Age of patient.	Sex.	Date of examination of urine.	Day on which the temperature reached normal.	Typhoid bacilli found.	Condition of the urine.	Remarks.
1	8	M.	12, 19, 31 (R), 44 (R), 53.	44	0	No albumin.	A case of medium severity.
2	13	M.	41, 62.	40	0	No albumin.	,,
3	20	M.	20, 25, 40, 48, 73.	63	0	Thick cloud of albumin.	,,
4	11	M.	29, 42.	21	0	No albumin.	A mil case.
5	16	M.	9, 17, 25, 35.	23	0	,,	,,
6	39	M.	12, 18, 26, 36.	27	0	,,	,,
7	18	M.	25.	Fatal.	0	Faint cloud of albumin.	Died on the twenty-seventh day from heart failure.
8	36	M.	21, 30, 37, 51.	27	0	No albumin.	A mild case.
9	22	M.	16, 24, 31, 43.	27	0	Faint trace of albumin.	Very ill, but recovered.
10	33	M.	20, 28, 31, 34, 38, 42, 66.	35	0	From the twenty-eighth day onward the patient suffered from cystitis caused by bacillus coli.	,,
11	20	M.	38 (R), 49 (R), 59, 73.	51	0	Cloud of albumin.	Very ill.
12	18	M.	11.	Fatal.	0	,,	Died on the eighteenth day from heart failure.
13	13	M.	29, 40, 47.	30	0	,,	Very ill.
14	14	M.	11, 21, 30.	21	0	No albumin.	A mild case.
15	20	M.	13, 20, 27 (R), 34 (R), 41 (R), 51, 58.	41	0	Haze of albumin.	Extremely ill.
16	14	M.	21, 30, 47.	22	0	No albumin.	A mild case.
17	29	M.	20, 29, 36, 51 (R), 63.	52	0	Trace of albumin.	A case of medium severity.
18	21	M.	9, 12, 18.	Fatal.	0	One-fifth albumin.	Died on the eighteenth day from heart failure.
19	12	M.	18, 27, 34, 49.	25	0	No albumin.	A mild case.
20	16	M.	16, 25, 32, 48, 58.	46	0	,,	Very ill.
21	10	M.	22, 31, 39, 53.	31	0	,,	A mild case.
22	19	M.	20, 28, 35, 48.	—	0	,,	—
23	31	M.	12, 23, 27, 30.	Fatal.	0	,,	Died on the thirtieth day from lobar pneumonia.
24	21	F.	9, 12, 17.	15	0	Faint cloud of albumin.	A mild case.
25	15	M.	7, 10, 13, 15, 18, 21, 24.	21	0	,,	,,
26	28	M.	10, 12, 14, 17, 19, 21, 24, 27, 30.	22	0	Trace of albumin	,,
27	19	M.	9, 11, 13, 16, 18, 20, 24, 26, 29, 31, 34.	27	0	No albumin.	,,
28	—	M.	29, 41, 54.	31	0	,,	,,

(R) signifies that the observation was made during a relapse.

It is, however, recognised by those who have worked at this subject that no hard-and-fast line can be drawn between bacteriuria and cystitis. That is to say, that while a typical case of bacteriuria will give rise to no symptoms and will at most show under the microscope a few scattered pus cells in addition to the bacilli, there are others in which the patient may complain of slight pain in passing the urine and slight frequency of micturition, the number of leucocytes also increasing, but still not forming a deposit visible to the naked eye. Finally, these cases merge again into cases of frank cystitis. Now this is exactly what is also noticed in the bacilluria of typhoid fever. According to my experience

[48] Brit. Med. Jour., vol. ii., 1881, p. 359 and p. 623.
[49] Annales Génito-Urinaires, 1894, p. 196.

about half the cases are examples of simple bacteriuria. The patients complain of absolutely no symptoms whatever; there is no frequency of micturition and no pain accompanies the act. The urine itself swarms with bacilli and beyond this nothing can be seen abnormal in it. Under the microscope, however, an occasional pus cell can generally be found. These cases are nearly always undetected because of the absence of symptoms. There are, however, others in which, in addition to the bacilli, there is an evident deposit of pus visible to the naked eye, showing that the bladder mucous membrane has become slightly inflamed. The inflammation, however, must be very slight, for usually in these also no symptoms are manifested. Lastly, we have cases in which, while the urine remains the same—that is to say, contains bacilli and pus, but remaining of course acid, since the typhoid bacillus has no power to decompose urea—we have clinical symptoms—namely, pain and frequency of micturition and possibly tenderness over the region of the bladder. These cases of obvious typhoidal cystitis are rare. No. 6*a*, Table VI. of my series (Appendix, Case II.) was, however, such a case, and other cases have been reported, for example, by Krogius[50] and a notable one by Melchior.[51] To this latter case I should like to draw special attention, for though published in 1897 in his monograph on cystitis it was observed in 1892, and is probably the first case of cystitis due to the typhoid bacillus ever diagnosed.

How are we to explain these differences—viz., that in some cases we have merely a bacilluria and in others a true cystitis? Evidently from our knowledge of the fact that the mere presence of bacteria in the bladder is not sufficient of itself to cause cystitis. Some predisposing cause is also necessary, as, for example, some injury to the bladder walls. Now, in typhoid fever so many tissues suffer from the effects of the fever that it is not a very hazardous assumption to believe that in some cases the mucous membrane of the bladder may be damaged with the rest.

If, then, in a case of typhoid fever the bladder mucous membrane is in a natural condition and if the urine be passed at the usual intervals, then if bacilluria occurs it will remain a simple bacilluria. But should there be marked retention or should the bladder walls have been damaged in any way during the course of the disease then we have the condition in which a frank cystitis may be set up.

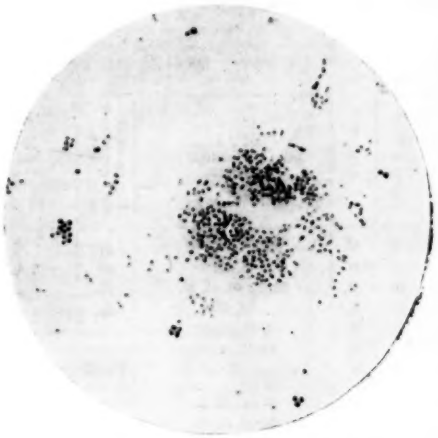
It is interesting to note, too, that this view receives valuable support from experiment, which shows that according as the circumstances vary the typhoid bacillus is capable of causing now a simple bacilluria, now a pure cystitis. Thus, Melchior[52] showed that if a rabbit be taken and one cubic centimetre of a broth culture of typhoid bacilli be injected into the bladder no symptoms follow, but a bacilluria lasting for about ten days results. If, however, immediately after the injection the penis be ligatured for some hours and retention be produced then true cystitis follows. *There can be little doubt, then, from the above considerations that typhoid bacilluria, such as we see it in the wards, is due to infection of the urine by a stray typhoid bacillus, excreted by the kidneys from the blood, and its immediate multiplication in the bladder-urine. If in addition the bladder walls have been in any way damaged, then true typhoidal cystitis follows.*

Specific bacilluria and cystitis occur, as we have seen, not infrequently in typhoid fever. It would be a mistake, however, to suppose that in every case when "bacteriuria" occurs in this disease it is due to the typhoid bacillus. As a rule, the typhoid bacillus is the microbe present, but in rare cases bacteriuria may be produced by the streptococcus pyogenes, or even by the staphylococcus aureus, facts demonstrated in the accompanying reproductions of photographs, which represent in each case a drop of the urine as passed dried on a cover-glass and stained. Similarly, though cystitis in typhoid fever, when not the result of catheterisation, is far most commonly set up by the typhoid bacillus, we must remember that other micro-organisms may produce it. Thus cases exactly similar to the typhoidal ones may result from the invasion of bacillus coli. Indeed, it is surprising that invasions by this and other micro-organisms are not more common when we remember the opportunities offered by the ulcerated intestines.

CHOLECYSTITIS.

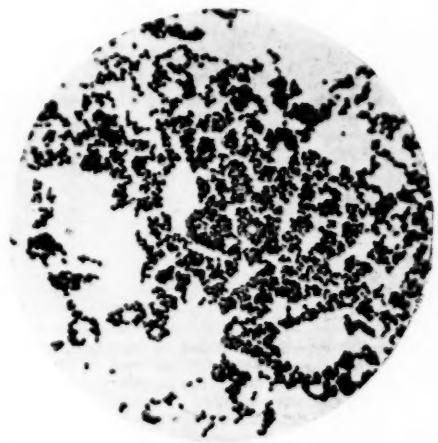
It is interesting to note that a very close parallel may be drawn between the relation of the bacillus to the urinary bladder and that which it bears to the gall-bladder. In the latter, just as in the former, it is not uncommon for the micro-organisms to be present in large numbers, but to give rise to no symptoms. Should, however, retention be produced or the walls irritated by the presence of gall-stones then cholecystitis follows, just as cystitis does in the case of the urinary bladder. Ten such cases have been recorded by Hunner,[53] many of them occurring at some considerable time after the attack of typhoid fever, and in all the typhoid bacillus was found at the time of operation in pure culture. Moreover, the parallelism may be pressed further, for, just as cystitis in typhoid fever will sometimes depend on the presence of bacillus coli and not on that of the specific micro-organism, so also the same may occur in the case of the gall-bladder. Thus five cases of post-typhoidal cholecystitis in which bacillus coli communis was found in pure culture in the inflamed organ are recorded in Cushing's[54] interesting paper.

FIG. 1.



"Bacteriuria" in typhoid fever. Staphylococcus pyogenes aureus. Rare. × 1000.

FIG. 2.



"Bacteriuria" in typhoid fever. Streptococcus pyogenes. Rare. × 1000.

TYPHOIDAL CHOLELITHIASIS.

In reading the record of the true typhoidal cases of cholecystitis it is noteworthy how almost constantly gall-stones were found at the time of operation. Indeed, so striking is

[50] Ibid., May, 1894, p. 370. [51] Loc. cit., vide note 40.
[52] Loc. cit., vide note 40.
[53] Loc. cit., vide note 26. [54] Loc. cit., vide note 24.

this fact that it early led to the idea that the typhoid bacilli themselves were the cause of the cholelithiasis, and that, as a rule, it was only after the formation of the stones that the inflammation of the gall-bladder took place—a view which would well agree with the fact that not uncommonly it may be months, or even years, after the original fever before the cholecystitis occurs. The theory is supported by the fact that, as Naunyn [55] and others have shown, micro-organisms may often be found in the centre of recently formed stones, and also by the observation of Richardson [56] that not uncommonly after death the typhoid bacilli in the bile may be found agglutinated. He observed this in five out of six cases in which he examined the bile, and although these numbers give too high a percentage they certainly prove that the condition is no uncommon one. It is easy to see how this agglutination, when it occurs, would form a nucleus round which biliary salts would be deposited and thus lead directly to the formation of stones. Recently the matter has been carried a stage further, for both Gilbert and Fournier [57] and also Richardson [58] have succeeded in producing artificial biliary calculi—the former in the rabbit by the injection into the gall-bladder of attenuated typhoid cultures and the latter in the guinea-pig by the use of already agglutinated bacilli. From the centre of Gilbert's calculus, also, typhoid bacilli in pure culture were obtained. There can be hardly any doubt, then, that the typhoid bacillus is capable of leading directly to the formation of gall-stones, and it is easy to see how the latter would assist the former in setting up the cholecystitis. If, then, inflammation of the gall-bladder occur after a case of typhoid fever, and the specific bacilli be

FIG 3.

"Bacteriuria" in typhoid fever. Bacillus typhosus. Common variety. × 1000.

found in pure culture, the sequence of events in all probability has been, first the formation of gall-stones and only secondly cholecystitis. In a few cases—and this is especially seen in those rare ones occurring during the fever itself—the gall-bladder may become inflamed primarily through the action of the typhoid bacillus, without gall-stones being present. But in these cases, just as with typhoidal cystitis, the walls have in all probability been damaged through the stress of the disease and the predisposing cause is therefore already present.

SUPPURATION IN TYPHOID FEVER.

We may now turn our attention to suppuration in typhoid fever. In the earlier days of bacteriology all suppurations occurring in typhoid fever were regarded as due to a secondary infection by the pyogenic micro-organisms, and the experiments of Dmochowski and Janowski [59] and others, showing that experimentally the typhoid bacillus itself is quite capable of producing suppuration, came therefore somewhat as a surprise. Their correctness, however, was soon demonstrated, for it was shown that not uncommonly in man the typhoid bacillus could be obtained from the pus in pure culture. These cases have lately been collected by Keen,[60] and they show clearly that in the most diverse situations suppurations due to the typhoid bacillus have occurred. It would be a grave error, however, to suppose, as is sometimes done, that the majority of typhoid suppurations are directly due to the typhoid bacillus. This is certainly not the case; the greater number are without doubt the result of secondary infections and are produced by the ordinary micro-organisms of suppuration. This point was very clearly brought out by Vincent,[61] who in 1893 examined bacteriologically 41 cases. 32 of these cases were produced by the staphylococcus aureus or citreus, eight by the "streptococcus pyogenes either alone or in conjunction with the typhoid bacillus," and one only was produced directly by the typhoid bacillus alone. The great preponderance of cases due to the pyogenic cocci is thus well shown; and this is a point which we are apt to forget at a time when nearly every case due to the typhoid bacillus rapidly finds its way into print.

In suppuration, however, connected with bones, post-typhoidal periostitis and osteomyelitis, which Sir James Paget [62] was one of the first to describe, it is undoubtedly much more common to find the typhoid bacillus, and the reason of this is not far to seek when we remember how constant is the presence of the bacillus in the bone marrow during the disease. Keen [63] in a careful survey of the lately published cases finds that of 51 cases in which a bacteriological examination was made, 38 contained the typhoid bacillus and 13 the pyogenic micro-organisms; while Parsons [64] in six cases found the typhoid bacillus in pure culture in four cases and associated with the staphylococcus citreus in one case; in only one case did he find the staphylococcus aureus alone. At St. Bartholomew's Hospital the typhoid bacillus has not been found quite so frequently. Thus out of four cases of periostitis examined in two only was the typhoid bacillus found, once alone and once associated with the staphyloccus.

Speaking generally, however, it will be true to say that *while it is very common to find the typhoid bacillus in pure culture in the abscesses connected with bone, in suppurations occurring elsewhere its presence is undoubtedly rare.*

The following table from the records of St. Bartholomew's Hospital, the observations having been made by the late Professor Kanthack, Dr. Drysdale, or myself, demonstrates these points clearly and especially shows the rarity of the typhoid bacillus in inflammations unconnected with bone. In eight such cases examined it was not once found.

TABLE VII.—*Typhoid Suppurations.*

No.	Nature of the suppuration.	Micro-organisms found.	—
1	Periostitis, sternum.	Typhoid bacillus (pure culture).	—
2	,, right tibia.	Typhoid bacilli + staphylococci.	—
3	,, left tibia.	"No typhoid bacilli."	Typhoid bacilli not present.
4	Periostitis, distal phalanx of the thumb.	"Pyogenic cocci."	
5	Parotid bubo.	Staphylococcus pyogenes aureus.	
6	Ischio-rectal abscess.	Bacillus coli and streptococci.	
7	,, ,,	Streptococci.	
8	Subcutaneous abscess.	Staphylococcus pyogenes aureus and albus.	
9	,, ,,	Staphylococcus pyogenes aureus.	
10	,, ,,	Staphylococcus pyogenes aureus.	
11	Subcutaneous and intramuscular.	"Pyogenic cocci."	
12	Mammary abscess.	Staphylococcus pyogenes aureus.	

[55] Cholelithiasis, New Sydenham Society, 1896, p. 51.
[56] Journal of the Boston Society of Medical Sciences, January, 1899, iii., p. 79.
[57] Comptes Rendus de la Société de Biologie, 1897, p. 936.
[58] Loc. cit., vide note 56.
[59] Loc. cit., vide note 23.
[60] Loc. cit., vide note 28.
[61] Annales de l'Institut Pasteur, 1893.
[62] St. Bartholomew's Hospital Reports, 1876.
[63] Loc. cit., vide note 28.
[64] Johns Hopkins Hospital Reports, 1895, p. 417.

THE PERSISTENCE OF THE TYPHOID BACILLUS IN THE BODY.

There is one other point which it may be of interest now to consider, and that is, what is the length of time during which the bacillus may remain in the body? It was naturally supposed at first that as the fever passed away and as health returned the bacillus, the cause of the disease, would disappear from the tissues also. This apparently was demonstrated by the earlier observations. Thus it was shown long ago that if the spleen or mesenteric glands—the classical breeding grounds of the microbe—be examined late in the disease no typhoid bacilli are found, the organs being either sterile or possibly containing bacillus coli communis. This has been noticed by Flexner[65] as early as the sixth week, while Dr. Klein[66] has recorded it in the ninth week of the disease. The experiments of Blackstein and Welch,[67] however, showed that, sometimes at least, the typhoid bacillus might remain for much longer periods in the body. Thus after intravenous injections of the bacillus into rabbits they found that the bile still contained the micro-organism when the animals died or were killed at such long intervals as 84 days, 109 days, and even 128 days after the date of inoculation. The other organs were, however, found sterile.

These experimental results in animals naturally suggested that the same thing might occur in man after typhoid fever, and this has been amply demonstrated, for we now know that it is nothing uncommon for the bacilli to remain dormant in the bile or the bone marrow for long periods, the patient, just like the experimentally inoculated animal, being meanwhile often in perfect health, and then under the influence of some passing stimulus to resume their activity and to give rise now to periostitis, now to osteomyelitis, or it may be to cholecystitis. Of the later cases belonging to the former group (bone affections) the chief interest centres round those recorded by Buschke,[68] Sultan,[69] and Bruni,[70] in which the bacilli were found in pure culture in the pus in two cases six years after the primary fever and in one case seven years afterwards. By far the most important is that of Bruni, on account of the very great care exercised in testing the isolated bacillus, so that his case may be accepted without hesitation. The patient was a woman, 36 years old, who suffered from typhoid fever in September, 1889. During convalescence she had some pain over the right tibia which lasted for some time, but which gradually disappeared. After some years, however, it returned and becoming worse she presented herself at the hospital in the year 1895 six years after her primary attack. The upper part of the right tibia was found to be swollen and reddened, and osteomyelitis was diagnosed. The bone was consequently trephined and in the centre a cavity filled with grumous pus was discovered. The contents contained the typhoid bacillus in pure culture. This case may be accepted without any doubt, and is only a type of many others recorded though not so rigorously examined. If we now turn to cholecystitis we find the same remarkable facts. Thus, to mention but a few, though many are recorded in Hunner's interesting paper,[71] In one case the bacilli were found in pure culture in the inflamed gall-bladder three months after the fever, in another eight months, and in a third after an interval of seven years. The most remarkable case of all, however, and one very carefully tested, is that recorded by Von Dungern[72] in which fourteen and a half years after the attack of typhoid fever the bacilli were still present in pure culture in the pus. Truly no longer can we say with Dr. Budd[73] that "by destroying the infectious power of the intestinal discharges the disease may be in time finally extinguished." So far, indeed, from the stools being the only agents by means of which the disease is spread they are but one of a series of agents. So far, too, from the patient ceasing to be a source of danger after his restoration to seeming health he may carry about in himself the seeds of infection for months and even years.

[65] Johns Hopkins Hospital Reports, 1896, p. 377.
[66] Report of the Medical Officer to the Local Government Board, 1892-93.
[67] Johns Hopkins Hospital Bulletin, 1891, pp. 96 and 121.
[68] Fortschritte der Medicin, 1894, p. 572.
[69] Deutsche Medicinische Wochenschrift, 1894, p. 34.
[70] Annales de l'Institut Pasteur, 1896, p. 220.
[71] Loc. cit., vide note 26.
[72] Münchener Medicinische Wochenschrift, 1897, p. 699.
[73] Typhoid Fever, London, 1873, p. 180.

THE TREATMENT OF RHEUMATISM, ITS PROPHYLAXIS AND CARDIAC COMPLICATIONS.[1]

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I MUST first of all acknowledge the great honour, which I feel it to be, to be requested to make some final remarks in conclusion of this discussion and I will mark my sense of that honour by being as brief as I can consistently with due respect to the number of very able and eminent speakers who have preceded me. I think, after hearing the remarks of some speakers at the last meeting and still more after the remarks of most speakers at this meeting, that we may fairly say that the profession are certainly prepared to accept, if not to welcome, the arrival of a microbe as representative of the rheumatic disease provided that it be duly accredited to us by scientific investigation. I am bound to say that although we have been well prepared for the possible advent in some saprophytic form of such an organism by the most elaborate and able Milroy Lectures of Dr. Newsholme to the Royal College of Physicians of London, the points of which have been given to us so carefully by Dr. W. Ewart, yet these arguments, meteorological, bacteriological, epidemical, or clinical, do not, I think, do more than lend colour to a preconceived hypothesis, however scientific it may be, of the possible existence of such a microbe. The position most likely occupied by such an organism has been placed near the surface of the soil. It is presumed to dwell in certain localities and even to lurk about certain houses; its avenues of entry have been defined as through the tonsil or possibly the air-passages or digestive tract, but beyond these statements with regard to the organism we cannot say that we know anything whatever about it and it has never been demonstrated to us. It does not, however, follow that it may not appear, and that soon. We can have no quarrel with any hypothesis which leads to so practical a therapeutical suggestion as that initiated by Dr. T. J. Maclagan—viz., the introduction of the salicyl compounds in the treatment of rheumatic fever.

There have been certain organisms discovered in rheumatic fever alluded to by Dr. Ewart—viz., the staphylococci, the streptococci, the pneumococci, and I think a few others—which have been found by certain observers more particularly in those cases in which the rheumatic fever has been associated with tonsillitis, and an interesting paper was read by Dr. P. S. Abraham before the Clinical Society last June in which he speaks of cases of rheumatic fever associated with throat affection. He divided these cases of rheumatic tonsillitis into two forms—faucial erythema, with which we meet as part of the rheumatic illness and tonsillitis proper, the latter including follicular tonsillitis and ordinary quinsy. Dr. Abraham found these organisms in the secretions and sections of the tonsils, in the blood, in the urine, and I think in the joint fluids. Dr. Abraham's observations are to my mind of great interest, but I venture to doubt whether they really throw much light on the point which he was trying to introduce—viz., the possible result of rheumatism from these causes. Dr. Abraham alluded to 11 cases, all of which were children except one, and from other facts mentioned in the paper I gather that almost all his throat cases were cases of follicular tonsillitis. I am not surprised at these organisms being found in the follicles of the tonsils and in the blood in the case of follicular tonsillitis, for follicular tonsillitis is a disease which is always regarded as one suggestive of at least a mixed infection, and one never sees a case without careful inquiry as to drains and sanitation. It was interesting to me to remember the occasional occurrence—I have only met with two cases—of infective endocarditis as a process arising in the course of primary acute rheumatism, and the fact of finding such organisms in association with acute rheumatism

[1] The reply to the debate on the Treatment of Rheumatism at the Chelsea Clinical Society delivered on March 20th, 1900.

would lead one to see how perilously possible the occurrence of infective endocarditis may be in such cases.

With regard to the blood, however, but little has been said. There is a characteristic sign and a diagnostic sign almost, one might say, of a remarkable increase of fibrin in rheumatic patients only equalled by that found in pneumonia; the red corpuscles are notably decreased and the white corpuscles are increased. The total acidity of the blood is increased, or it is better, perhaps, stated that the total alkalinity of the blood is diminished. This acidity of the blood led many years ago to the lactic acid hypothesis of rheumatic fever which, I think, has been trenchantly criticised by Dr. Pye-Smith as an exploded idea. Whether this increased acidity be the result of some modified local metabolism or of some disordered intestinal secretion leading to the production of some ferment or to the advent of the bacterial ferment, which has been so largely supposed in the present discussion and in the current literature of the day, I am quite unable to say. On these points we must wait with due reserve for the further researches which are sure to be made and the enlightenment which will surely come to us.

It is a curious fact that the nervous system has been almost entirely forgotten in the present discussion and yet some will remember how lively a discussion took place 25 years ago as to the origin of rheumatic fever as a neuropathy, in which Dr. T. Buzzard took a very prominent part. When one considers how very closely allied the nervous system and arthritis are one cannot be surprised at such a hypothesis having arisen. We know perfectly well that rheumatic arthritis is almost invariably a disease preceded by some appreciable nervous shock, agitation, or prolonged anxiety, and Charcot's neuro-arthritic cases are well known. Hyperpyrexia in rheumatic fever is almost the only possible way of people dying in this disease except from direct cardiac lesions. Hyperpyrexia is a paralysis of the thermic control centres and is closely associated with the recedence of the proper rheumatic manifestations, although it is found in other diseases as well. Again, chorea is a disease of rheumatic and of nervous manifestation, and I must say that it was ingeniously and attractively disposed of by Dr. A. E. Garrod by saying that it was a sequel of rheumatic fever just as diphtheritic paralysis and such nerve-lesions may be sequelæ of diphtheria arising from the specific action of toxins on the nerve centres.

With regard to the prophylaxis of the disease I do not think anything is to be said. Dr. Ewart asked many questions about the prophylaxis of rheumatic fever and he proposed to us a good many conundrums, but he did not answer them so far as I know. If one may criticise Dr. Ewart's paper in a kindly spirit I should agree with Dr. A. E. Sansom's remark that it was a little too arthritic. Arthritis is an essential feature of rheumatism even in children. You rarely meet with a child with "cardiac rheumatism" who has not exhibited pains called by the friends "growing pains" sufficient to hamper the liveliness of the child. The peculiar arthritis in acute rheumatism is a part of the disease, it is as ephemeral as the rose-spot of typhoid fever, with which to my mind it is closely analogous, and the duration in each joint is about the same. When it lasts longer in one or more joints one finds that the disease is not a pure disease but a mixed disease, such as gonorrhœal rheumatism or a rheumatism in association with hæmophilia, or possibly complicated by tubercle.

Still greater difficulty have I in regarding rheumatism exclusively from the cardiac side. Dr. D. B. Lees says it is a cardiac disease with arthritic complications. Dr. Lees deserves our gratitude for the clearness with which he puts before us any hypothesis he may have. There is no doubt whatever as to what he means; he briefly and frankly states the whole case from his point of view. With regard to cardiac dilatation in rheumatism, he regards cardiac disease not necessarily as endocarditis, but as a gradual affection leading to the dilatation of the organ, and I think it is an interesting thesis for discussion. I confess that I had not observed this dilatation of the heart as a constant effect in rheumatism. It is possible that I have overlooked it. One examines patients, but looking back no one can say that he has examined all the cases with sufficient accuracy with regard to this one point to be able to exclude it. In anæmic cases, and especially in anæmic young women, who so commonly come into hospital with rheumatic fever, one frequently, of course, observes some cardiac dilatation. One may meet with cardiac dilatation in any febrile condition, and one is accustomed to regard it as attributable to that condition of muscle present in association with high temperatures to which pathologists give the delightful term of "cloudy swelling." I do not know quite what it means, but it is attended with a somewhat less distinct outline of the elements of the muscle and an increased softness of the tissues and is a condition that is very compatible with the possible yielding of the muscle before the blood pressure. Myocarditis we meet with as a cause of the enlargement of the heart, and fatty degeneration is a rare cause of sudden death in rheumatism. But these facts will not at all explain Dr. Lees's findings with regard to the heart in acute rheumatism; there is, so far as I can gather, scarcely any way out but that the heart must be partially paralysed by some definite poison affecting it, such a poison as Dr. Lees describes as an undue acidity of muscular texture. Then, again, the rapid diminution in the enlargement of the heart under treatment is another point observed by Dr. Lees. Dr. Ewart at a meeting of the Clinical Society of London endeavoured to explain these cases by saying that there was some temporary effusion into the pericardium, but Dr. Lees will not admit this; and I can conceive no explanation except that which Dr. Lees expounded, only I think that he would fully expect that his observations would be received with a respectful scrutiny on the part of those to whom it was first presented. As regards the description, the definition of rheumatism, I should much prefer the very accurate definition which was given us by Dr. Archibald Garrod that it is "a systemic disease with arthritic and cardiac manifestations," a definition which is accurate and which is safely within the limits of our knowledge of the actual causes at work in acute rheumatism.

In my second Lumleian Lecture two years ago I ventured to sum up in a sentence the current treatment of acute rheumatism, which has drifted down to us from the experience of many years past. Such patients should be treated by "absolute rest in bed in woollen wrappings, a free relief of the bowels, and the administration of salicylate of soda in efficient doses in combination with such alkaline remedies as the condition of the urine may suggest," and I have been interested to see how far this ordinary routine treatment has been exemplified or departed from by those who have spoken. The object of the treatment is to diminish suffering, to lessen the duration of the disease, and to protect the heart. It is, of course, absolutely unnecessary in an assembly of practical men such as this is to speak of the necessity of keeping rheumatic patients in warm wrappings in a comfortable, well-ventilated room, and of securing a free relief of the intestinal secretions. I do thoroughly approve of the diet of patients being strictly liquid, and mainly milk, for a good many days. Dr. Burney Yeo's remark was a valuable one and one apt to be forgotten in hospital practice, and that is, "Let the patient have a good drink of water if he wants it." One sees in hospital wards the careful manner in which water is given as if it were a potent medicine instead of a soothing drink. With regard to rest in the treatment I feel bound to linger a little, although less to-night as so much has been said. I do think that the profession have not yet fully grasped the exceeding importance of absolute and prolonged rest in the treatment of rheumatic fever, especially, of course, when the heart is involved. The inadequacy of treating the patient by rest has largely affected the statistics of the salicylate treatment. A practitioner will give salicylates to a patient and in two or three days the patient is free from pain and does not see why he should not get up. Determination is required to make him keep at rest. The salicylate treatment relieves the symptoms of the disease and subdues many of its important features, but it does not cure the rheumatic illness, it does not shorten the duration of that illness. You cannot get out of the rheumatic illness under four or six weeks, and if, because the patient is relieved of pain he begins to move about he nevertheless is still a patient with latent rheumatic fever and may have a relapse and in all probability a relapse with cardiac complications. With children the slight joint affections often mislead the practitioner and the rheumatism may not be detected, with the consequence that relapses occur with cardiac complications. Dr. R. Caton was very emphatic about the importance of rest in the treatment of rheumatism. I may venture to say that I think a good deal of Dr. Caton's great success in the treatment of rheumatism is due to his having so early recognised the extreme importance of continued long rest throughout the rheumatic illness. Dr. Sibson, who was the first advocate of the rest treatment in rheumatic fever, was curiously inadequate in his

directions in regard to it, and his directions were that the patient should be kept quiet in bed "for a period of several days after the complete disappearance of the local inflammation of the joints." The point in the treatment of rheumatism is that so long as the tongue is coated, the urine is loaded, and so long as there is a trace, even the slightest trace, of pyrexia, people must be kept rigidly in bed in warm clothing and also for a period of a good many days afterwards even in the complete absence of any cardiac affection.

There is one little point in regard to temperature that is important. One so often hears it said that a patient has no fever of any consequence, that the temperature only runs up to about 99° F., or a little below, and you are told he is not feverish. But 99° in the mouth or the axilla is a morbid degree of temperature, and taken in association with the history of recent rheumatism or a slight endocarditis it is an absolute sign of the importance of preserving complete rest. As Dr. Maclagan said, inflammation in the valves of the heart is very slow to subside, and it is not a mere surface inflammation but affects the fibrous texture of the valves, which are ever in function: and when diminished in resisting-power by recent inflammation the extra strain upon them of several thousand impulses per day involved by the patient changing from the position of absolute rest to the upright posture, or sitting or moving, is enough to keep up the inflammation and to cause a deforming valvulitis. I remember well Sir William Jenner's memory-clinging words when he used to say in the clinical wards, "Children do not grow out of heart disease, they grow into it." That statement was mainly founded on the treatment of rheumatic fever in our hospitals and especially in children's hospitals where, at that time particularly, rest, complete rest, for a sufficient length of time was not observed. I do not know whether the rest treatment can be observed fully in children's hospitals, the want of it is an explanation to my mind of that statement.

Again, I would venture to say from clinical experience that those two most grave cardiac affections of rheumatic origin, mitral stenosis and aortic regurgitation, are valvular lesions which are scarcely ever met with in primary rheumatic illnesses—they are almost always found in those cases which have left the hospital after a primary attack of acute rheumatism and have returned some months later. These two lesions are the consequences of subsequent slow deforming valvulitis from strain put upon the valves before they have completely recovered from the primary rheumatic lesion. In my experience, and in that of many of those who have spoken to-night, primary endocarditis is a curable disease in a large number of cases if taken in time and if the patient is retained at rest for a sufficient time to allow the valve to make recovery before the extra strain or function is put upon it.

With regard to salicylates, if they do not do all that which was originally claimed for them, their usefulness cannot be gainsaid. Those who remember the controversies of some 30 years ago, when the relative values of alkalies, blisters, iron, mint-water, and cotton-wool wrappings were discussed, will agree that there was no very marked advantage in the treatment of the disease by any of them. As already said, it is the universal experience that salicylates do not affect the duration of the rheumatic illness, but they do reduce the temperature and relieve the joint affections. It would be idle to discuss the mode of action of the remedy with which we are after all somewhat imperfectly acquainted which neutralises, although it does not extirpate, the rheumatic poison, a poison of which we know absolutely nothing. The salicin compounds are certainly remote antiseptics of considerable power. Those who have watched patients taking considerable doses of salicylate will have noticed how long the urine can be left standing exposed to the air without undergoing decomposition. It is said that statistics prove that cardiac complications are more frequent in those who are taking salicylate and that relapses are more to be feared than under the alkaline treatment. I think that Dr. Ewart hit on the fallacy of the inference from these statistics when he remarks upon "the indirect risk that arises that we may be misled into over-estimating its anti-rheumatic powers and relax too early both treatment and diet."

It is said, again, that salicylates have no influence upon hyperpyrexia in rheumatism. I do not know that any drug has an influence on hyperpyrexia when it is established, but in my experience hyperpyrexia has enormously diminished as a complication of rheumatism since the introduction of the salicylate treatment. Dr. W. E. Wynter has been kind enough to look through the records of the Middlesex Hospital for the last 30 years. In the years from 1870 to 1876—that is, before the period of the salicylate treatment—there were 952 cases of rheumatic fever with 30 deaths, that is to say, there was an average of 136 cases of rheumatic fever every year with an average death-rate of four and a quarter. In this period there were 11 cases of hyperpyrexia of which one case recovered. In the remaining 21 years, from 1877 to 1897, all within the period of treatment by salicylate, there were 2552 cases of rheumatic fever admitted into the hospital with 27 deaths, or an average of 121 cases instead of 136 cases per year, and with a death-rate of one and a half in 121 as against four and a half in 136. In that period there were only six cases of hyperpyrexia, all of which occurred in the first two years and four of which recovered. There has been no death from hyperpyrexia in the hospital since 1889. My impressions have been thus borne out by the hospital records. Then, again, in the treatment of hyperpyrexia I have made it a rule after reducing the temperature by cold to adhere to the salicylate treatment. I think it will be found that where hyperpyrexia occurs in a considerable proportion of the cases the salicylate treatment has not been pushed very vigorously.

Pericarditis is spoken of as a common complication of rheumatic hyperpyrexia. My experience, and I should like to know if it is the experience of others, is to find in high temperature that it is common to hear a pericardial friction sound or a rough murmur at the base of the heart, which is found to disappear when the temperature comes down nearer to the normal range. I have come to regard with great suspicion such adventitious sounds when presented in cases with a temperature above 104° and wait till the temperature is lower, looking upon them as often due to some temporary dryness of pericardial membrane or some changed hæmic state.

There have been various statements as to the unfavourable effects of the drug, some maintaining that these effects are rather imaginative. I must confess that I do not agree with this opinion. I have observed a distinct case of renal hæmorrhage associated with salicylate treatment and I think Dr. Pye-Smith mentioned some cases also. Then, again, the occurrence of great slowness and great feebleness of the pulse is sometimes met with in people taking salicylates, so notably met with as practically to interrupt the treatment by salicylate. Now and again one meets with delirium with a falling temperature coming on in the course of rheumatic fever; that is in my experience always an untoward consequence of salicylate treatment and requires the treatment to be interrupted. With regard to the dosage various opinions have been expressed. I for my part should say that a 15-grain dose is better than a larger dose, but it should be repeated at sufficiently short intervals to get the patient under the influence of the drug. When too large doses are given at first the drug is apt to cause vomiting or other disagreeable symptoms. I fully agree with Dr. C. C. Gibbes that the influence of the drug should be maintained.

The effect of the discussion will be to rehabilitate alkalies in our good graces. The alkaline treatment was tried in its thoroughness many years ago and was found wanting, and although it still lingers as a tradition in some London hospitals yet it has come to be softened down and to be mingled with the more efficacious salicyl treatment. Alkalies seem to be called for by the symptoms of rheumatic fever, but I should very much question whether they can have much influence upon that acidity which is said to be so potent in producing paralytic cardiac dilatation. For we must remember, at least I think I am right in saying, that the blood is never acid even in acute rheumatism; it may be less alkaline than is normal. As regards the sweat I have never observed the sweat of a patient to be rendered alkaline by the alkaline treatment even in cases where the urine is strongly alkaline. The urine is readily rendered alkaline, but I doubt whether it is of any advantage to make the urine, which is normally acid, alkaline in the course of the treatment of rheumatic fever. I should regard the usefulness of alkalies rather as increasing the oxidation of the tissues and promoting the elimination of morbid materials, whatever they may be, from the blood and should be inclined to give them in moderate doses.

With two exceptions, Dr. Donald Hood and Dr. Burney Yeo, opium has not been touched upon. It was at one time an important remedy in acute rheumatism. We do not now require to give opium to any great extent—it is useful for the first 24 hours for the relief of pain—but in myocarditis,

in grave forms of endocarditis, and especially in pericarditis, the opium treatment is of immense value, its object being to cause organic rest, so far as organic rest can be given to an automatically moving organ, by diminishing the rapidity of the pulse and quieting the restlessness and agitation of the patient.

With regard to blisters very much has been said and I should attach much importance to Dr. Caton's views after 19 consecutive years' observation. The idea of treating the surface nerves which have reference to the inner organs, the area of distribution of which has been so ably pointed out by Dr. H. Head, is an attractive one. The possibility of producing a reflex vaso-motory control of the affected valves is a very attractive hypothesis, but I still think it is rather straining physiological therapeutics to the extreme point. An ounce of fact, however, is worth a pound of theory and Dr. Caton has found the application of small blisters useful in acute rheumatism, and one can only suggest its further trial. We all agree on the little value of digitalis in the acute cardiac affections of rheumatism. The treatment of the more chronic affections of the heart in rheumatism referred to by Dr. Sansom by regulated exercises and by saline baths seems scarcely to come within the range of the discussion. I believe he would agree with me that these therapeutical measures are unsuitable in the treatment of acute or sub-acute rheumatism with any active trouble in the valves.

I fear my remarks have been discursive, but I would say that for my own part I have derived the greatest possible interest and advantage in carefully watching this debate through and I think it is a discussion which will be of extreme practical help and value. It is a most important function of clinical societies, in my belief, occasionally to bring forward questions of this kind, to be discussed from a large point of view, collating the experience of many observers in order to formulate some efficient and valuable treatment of such diseases which are the more important because they are very common.

ON THE TREATMENT OF THE RHEUMATIC DISEASES OF THE HEART IN THE EARLY PERIODS OF THEIR MANIFESTATION.

A RETROSPECT AND AN ESTIMATE.

BY A. ERNEST SANSOM, M.D., F.R.C.P. LOND.,
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IT is of a distinct value that we should at certain periods—the intervals being not too short—take stock of our therapeutic resources. When we do so we ought to be careful to steer a middle course between the whirlpool of extreme enthusiasm and the rock of stolid obstruction. It is easy to be carried away by therapeutic optimism. It is not difficult to be too much unconvinced and to carry out too inflexibly the maxim, "*Et surtout point de zèle.*" It seems to me that it would be very difficult at the present time to find a subject of greater practical importance than that of the treatment of rheumatism. It has been determined with much wisdom that the best plan for obtaining good practical therapeutic data is to obtain the opinions of many observers. This way has the advantage of excluding many fallacies and of presenting the therapeutic problems from many points of view. My own contribution to the investigation will be confined to a consideration of the manifestations of rheumatism upon the heart and surrounding structures and a very brief estimate of the best practical methods of treatment which we now possess according to my own deductions—deductions which I, of course, consider as fallible and only to be adopted if confirmed by the experience of others. I do not think that this survey of the great question, the pathology and treatment of rheumatism—a survey which in point of time has occupied me more than 40 years and has ranged over the fields of practice in a children's hospital and in general hospitals, in general practice and in the private practice of a hospital physician—can be wholly valueless. At any rate, I am thankful for the opportunity of giving my confession of the faith that is in me.

PRELIMINARY CONSIDERATIONS: MEANING OF THE TERM "RHEUMATISM."

I do not intend to offer any observations on academic questions. The meaning of the word "rheumatism" as it affects the heart will be manifested with more or less perspicuity in the course of this inquiry. I cannot help saying, however, that a clear mental picture of the disease must of necessity be in the mind of the medical practitioner before there can be any satisfactory solution of the problems of treatment. The differentiation of rheumatic diseases and the exclusion of the non-rheumatic have notably cleared the blurred picture that was presented to me in the earlier days of my medical life. Scarcely more than 20 years ago suppurating joints were described as rheumatic. Now we know—and knowledge is advancing—that there are many forms of arthritis besides the rheumatic forms. I need scarcely say that it is only within recent years that infective (septic or ulcerative) endocarditis has been accurately differentiated from the rheumatic form of the disease, in which, however, it not infrequently occurs as an epiphenomenon.

THE FIRST CAUSE OF RHEUMATISM.

Though we have no precise demonstration of the micro-organism or micro-organisms that effect the first morbid changes there is a general disposition to conclude that the disease is due to an infective agency which is correlated with the pathogenetic micro-organisms of the infectious diseases. From evidence which I have observed it has seemed to me that in rheumatism the early influence of tonsillitis (often a trivial unnoticed superficial lesion of the mucous surface of the tonsil) has been underrated. At any rate it is well that further investigation should be made upon this point, for the denuded surfaces of the upper air-passages offer a very favourable ground for the cultivation of micro-organisms, and the occurrence of scarlatinal or post-scarlatinal arthritis presents an argument from analogy.

SLOW EVOLUTION OF THE MORBID PROCESS.

Whatever the nature of the primary agency the resulting toxic effects must be very subtle in their early manifestations and very protracted in their course. A considerable array of evidence shows that the forms of heart disease, essentially rheumatic, may be induced in the fœtus in utero whilst the mother shows no notable signs of any rheumatic disease.[1] In the earlier years of life diseases which without doubt are of rheumatic form occur unnoticed and unrecorded. I am quite sure that endocarditis with resulting valvulitis causing persistent and increasing lesions of the heart-structures may thus occur. To explain the course of events on the hypothesis of an infective agency (a pathogenetic micro-organism) we must, I think, take one of two paths of thought: either the toxins are very slowly evolved and so for months and years after the first importation of the microbes produce morbid changes, sometimes in the heart-tissues, sometimes in the pleuræ, in the alveoli of the lung (broncho-pneumonia), in the fibrous tissues in various situations, in the skin, the blood, and the central nervous system; or else the toxins first evolved so affect the nervous mechanism as to induce a perversion of metabolism whereby an autogenetic morbid product is produced in the blood, the period of manifestation of such perversion of metamorphosis lasting during the period of childhood and maturity, for the tendency to the advent of true rheumatism ceases at the age of 35 or 40 years. Whatever hypothesis we adopt we must agree that successive waves of recurrence of the disease—storms followed by calms—are manifested during the months and years of life of the individual affected.[2] If it be, as I have said, that the diseases of the heart met with in the course of rheumatism are so subtle in their first manifestations, so symptomless, so protracted in their course, it should cause little surprise that the statistical method has not hitherto demonstrated in an absolutely convincing manner that modern therapeutic methods have succeeded in controlling or preventing the disease of the heart due to rheumatism.

Though statistical evidence, however, fails to show that the prevalence of heart diseases resulting from rheumatism has been unmistakeably reduced I am convinced that such diseases have been powerfully influenced for good by modern

[1] Purvis Oration, THE LANCET, Dec. 10th, 1898, p. 1536.
[2] The Nature of True Rheumatism, Clinical Journal, Dec. 7th, 1892, p. 81.

methods in a way that statistics do not and cannot demonstrate.

The distinct advances in therapeutics which I consider to be established by satisfactory evidence are: (1) the employment of salicin and the salicin compounds; (2) the use of the icebag and cold applications; (3) the employment of physical means for directly influencing the nerve mechanism; and (4) the judicious employment of bathing, hygienic methods, massage, and mechanical exercises.

THE SALICIN TREATMENT.

If this treatment fails to prevent the manifestation of rheumatic disease of the pericardium and the heart it is at any rate proved by a mass of convincing testimony that it promptly takes from acute rheumatism its painful terrors, ministers to comfort, and thus brings about that systemic calm which is of the first importance in obtaining a good result in cases of heart disease. The routine plan which I adopt in the case of an adult is to administer the pure salicylate of sodium in 20-grain doses, with five-grain doses of ammonium carbonate, or 20-minim doses of aromatic spirit of ammonia in an ounce of camphor water every two hours until six doses have been taken or until temperature has fallen and pain has ceased; subsequently the administrations are reduced to every six hours or every eight hours. It has been said[3] that sodium salicylate is incompatible with free ammonia, ammonium carbonate, or aromatic spirit of ammonia, but I have investigated this point and find that the mixtures of these substances show no decompositions and are perfectly well taken by the patients throughout the whole period of treatment. I have combined the alkaline carbonates, especially sodium carbonate in 20-grain doses, with the mixture in some cases, but I have not observed that this is in the early stages of treatment of any distinct advantage. Any recurring wave or storm of the disease is treated as the early symptoms and treatment is kept up for three to six weeks. I have very rarely observed signs of intolerance of the drug, but in a small minority of cases I have employed the dithiosalicylate of sodium in three-grain doses every eight hours in a cachet or in chloroform water with extract of liquorice. It is very rarely, however, that the sodium salicylate acts in any way other than beneficially and the toxic symptoms are sometimes wrongly ascribed to the drug as they are really due to the disease for which the drug is administered.[4] In all cases of acute rheumatism in which the features are a rise of temperature and painful affections of the joints I am convinced that the treatment by the salicylates is the best that can be adopted. With this there must be combined the policy of perfect rest in bed.

RHEUMATIC PERICARDITIS AND ITS TREATMENT.

The cases of rheumatic pericarditis which I have observed convince me that there is an important preliminary consideration before any estimate can be made of the value of a given line of treatment. I mean that there is an extraordinary variation in different cases in the nature, the extent, and the intensity of the symptoms of the disease. In some cases these symptoms are so grave that the patient seems, and is, in the extremest peril hour by hour; in other cases the signs and symptoms are so trivial as to be unnoticed and the affection is only found out on physical examination. The perilous, or even fatal, symptoms may be manifested at any stage of the disease. For instance, I have been called to a patient in acute delirium whose ravings have disturbed a whole ward. The delirium has been followed by prolonged epileptiform convulsions. In the course of a few days rheumatic pericarditis has been evidenced and has continued until recovery. In another case a patient was admitted in a typhoid state with diarrhœa and passage of some blood. I found the physical signs of pericarditis. After 18 days the adverse signs as well as the pericarditis had disappeared. Seven days afterwards there was a typical attack of polyarticular acute rheumatism. In many cases there are signs of great pain and distress, intense uneasiness at the præcordium and epigastrium, an extreme hyperæsthesia of the skin over the thorax, paroxysmal attacks of suffering of the nature of angina pectoris, difficulty of swallowing, vomiting, extreme breathlessness, terror depicted upon the countenance, lividity and cyanosis, with disturbances of breathing. I find these to be wholly disproportionate to the extent of the disease. There is in many cases a morbid acceleration of the breathing-rate (tachypnœa), and in many cases also orthopnœa with great distress and paroxysmal dyspnœa. I must conclude with Dr. D. B. Lees that in these cases the difficulties are caused by an involvement of the nerve-mechanism, an irritation of the sub-pericardial nerves whereby the respiratory centre is influenced by a morbid reflex. In other cases there is an extraordinary absence of symptoms of discomfort. I have observed a boy who has manifested the physical signs of a long-continued pericarditis and yet has complained of no subjective symptoms whatever. The boy could be kept comparatively quiet, but could not be induced to remain in bed. In a large number of cases I have traced the early signs and a full development of a typical pericarditis in the course of rheumatic fever without there being any noteworthy symptom to indicate the involvement of the pericardium in the disease. I cannot doubt that the true explanation of the immunity from grave symptoms in these cases is to be ascribed to the fact that the sub-pericardial nerves were not involved in the disease. In the other cases not only the difficulties of breathing, but the dyspnœa, the hiccough, the hyperæsthesia, the symptoms of angina pectoris and the heart failure are to be ascribed to an involvement of the structures of the nervous mechanism.

In the treatment of cases under my own observation I have very rarely found it to be of benefit to suspend the administration of the salicylates if these drugs have been in use for the painful and febrile stages of rheumatism. As an adjunct to such treatment (or in the absence of articular symptoms and of fever in substitution for it) my evidence points strongly to the value of the use of the icebag as advocated by Dr. D. B. Lees. In the case of pericarditis with typhoid symptoms already mentioned (that of a girl 17 years of age) when the signs were very great dyspnœa with irregular rhythm of respiration and compression of the lower lobe of the left lung by the distended pericardium, the icebag treatment was pursued for 16 days; then the signs of pericarditis disappeared. In another case (that of a girl aged 18 years), there was a great protraction of symptoms, the pericardium continuing greatly distended, and there was a friction sound for so long a period that I feared that there must be tuberculous pericarditis. The treatment was chiefly the prolonged use of the icebag suspended over the præcordium, but on three occasions six leeches were applied in addition. Recovery was almost complete when the patient was discharged after eight weeks of treatment. I have subsequently examined the patient and have found the heart to be perfectly healthy. Leaving out all statistical data I have no doubt in my own mind that in rheumatic pericarditis the use of the icebag over the præcordium has coöperated with the internal administration of the salicylates to be a treatment of high value—the best I know—for rheumatic pericarditis. It is now a routine practice with me. Usually the cold application is grateful to the patient; it is evidently anæsthetic and tends to subdue the pain and distress. In some cases it is not well tolerated. The patient irritably gets rid of the application and then I am sorry, but I do not push the treatment. For many years I adopted the plan of blistering the præcordium, but I think that this procedure is practically without influence both in regard to the comfort of the patient and the prevention of lasting disease.

THE SWOLLEN HEART OF RHEUMATISM.

From observations which I have made during a series of years I have come to the conclusion that the text-book descriptions of pericarditis and endocarditis do not convey to the mind a complete picture of the phenomena of rheumatism affecting the heart. Even in the absence of any signs of pericarditis, though sometimes concurrently with these, the whole heart may become enlarged. These enlargements are often followed by recessions, so there may be the physical signs indicating a great dilatation of the heart, both right and left chambers, at a given time, and 24 hours afterwards the heart may have receded to its normal limits. I have described such cases in International Clinics, 1894, p. 12. I need scarcely say that these views have been corroborated, with many precise observations and much addition to our knowledge, by Dr. D. B. Lees and Dr. F. J. Poynton.[5] It has seemed to me that these enlargements and recessions of the heart, recurring as they do, are closely analogous to the phenomena that occur in the rheumatic joint. There is not of necessity pericarditis as

[3] Martindale and Westcott: Extra Pharmacopœia, p. 31.
[4] The Treatment of Rheumatism, International Clinics, 1894, vol. i., p. 9.

[5] Transactions of the Royal Medical and Chirurgical Society, vol lxxxi., 1898, pp. 401 and 419.

ordinarily understood, nor is there endocarditis, but the whole heart is swollen, for a time hyper-vascular, infiltrated with exudations, and its muscle enfeebled, and after a limited period, which may be even as short as 24 hours, there is rapid absorption of exudation and a restoration to the normal. There are successive storms of rheumatism in the heart as in the joints.

From collateral evidence I think it probable that disturbances of the nervous mechanism of the heart are causally associated with these phenomena. I have observed an acute dilatation of the heart with rapid subsidence occur with signs that indicated neuritis of the vagus. In this case the cause was not rheumatism. I do not suggest that rheumatism ever induces neuritis of the vagus or any morbid affection of its central parts. I have no experience that the disease, uncomplicated, influences these structures, yet I think it highly probable that just as in some cases of pericarditis the sensory disturbances and the perversions of the cerebral mechanism are reflex and due to a morbid irritation of the sub-pericardial nerves, so in the swollen heart the acute dilatation is due to a temporary irritation of all the local nerve structures of the heart and pericardium. For many reasons I believe that the hypothesis of any direct weakening of the cardiac muscle, any form of myocarditis, is inadmissible.

TREATMENT OF THE SWOLLEN AND DILATED HEART OF RHEUMATISM.

In the first place I consider that the treatment by the salicylates should be continued and even the frequency of administration of the doses should be increased or be as in the early stages of the treatment of acute rheumatism. The icebag to the præcordium may also be applied or re-applied. In fact, in these points the treatment should be as for rheumatic pericarditis. It must, however, be remembered that on many occasions the case may put on a very grave aspect, and the patient may be in immediate peril. In such case I am emboldened to say that I have never seen any good results from the administration of digitalis (or digitalin) and I think I may say from experience of the past that I have sometimes seen much to regret from its employment. Sir T. Lauder Brunton and Dr. Cash have shown that digitalis does not manifest its usual good effects upon the heart muscle when there are conditions of pyrexia.[6] My experience from a clinical point of view confirms this statement. So also, according to my own observations, the drug fails to exercise its tonic power on the heart muscle (although it may induce vomiting and other toxic symptoms) when the structures are infiltrated with morbid exudations.

Failing cardiac power is best treated by the frequent administration of ammonia and similar diffusible stimulants in small doses with camphor water or by musk in from three to five-grain doses, or tincture of sumbul in 20-minim doses in camphor water, or by hypodermic injection of one-fiftieth or one-thirtieth of a grain of strychnine (sulphate, hydrochloride, or nitrate).

EMPLOYMENT OF THE CONTINUOUS GALVANIC CURRENT IN THE AREAS OF THE VAGI.

I have had considerable evidence to show that this may be a valuable agency in the treatment of the rheumatic heart in its more severe manifestations. For instance, in a case of extreme severity in which I observed recurring enlargements of heart and extremely critical symptoms I adopted in addition to the salicylate treatment the administration of the constant galvanic current from eight cells to the course of each vagus nerve for six minutes three times daily. The anode—a flat metallic plate covered with soft tissue and moistened with hot water—was applied over the nape of the neck, and the cathode—a metallic tissue-covered button similarly moistened—was pressed over the skin of the neck outside the larynx and trachea, or moved slowly up and down from the mastoid process to the clavicle on the right and the left sides alternately. The patient made a most satisfactory recovery. The dilatations of the heart subsided to the normal, the subjective symptoms passed away, and the patient returned to the active duties of life, although there was a murmur of aortic regurgitation. I have seen him, more than 12 months after his illness, hale and strong and oblivious of any imperfection in his heart-valves, and indeed such imperfection is but very slight. I have observed good results in several other cases thus treated, but I cannot, of course, claim for this mode of treatment the efficacy that I have considered to be established in regard to the other therapeutic measures I have mentioned. It is yet *sub judice*.

[6] Address on the Connexion between Chemical Constitution and Physiological Action. Brit. Med. Jour., Aug. 14th, 1886, p. 329.

RHEUMATIC DISEASE OF THE VALVES OF THE HEART.

I have written down my experience which tends to show that the morbid changes in the pericardium and in and about the muscular structures of the heart often occur insidiously and are not betrayed by characteristic symptoms. I assert this still more strongly of rheumatic affections of the valves. In the pronounced rheumatic storms affecting the heart, when there is pericarditis or the swollen heart of rheumatism, it is common, though not invariable, for the endocardium and the valves to be involved. In such case the area of lining membrane of the heart being so extensively diseased, the morbid changes occur chiefly in the mitral valve, the chordæ tendineæ, the musculi papillares, and all the structures in the neighbourhood of the valve, and the result is usually mitral incompetence.

The patient departs from our observation with the systolic murmur of mitral regurgitation and resulting changes which may be compensatory in the left auricle and the two ventricles. But even in a case like this there may be a fallacy. I have known cases in which an apical systolic murmur was manifested during and after pericarditis so that exceedingly good observers had no doubt that there was mitral valvulitis with incompetence and yet the necropsy showed pericarditis only with no involvement of the mitral valve in disease. In such cases I believe the murmur to have been due to an enfeeblement of the heart muscle and especially of the papillary muscles. If there had been a recovery from the pericarditis the murmur and all physical signs of mitral regurgitation would have passed away. In many cases, however, the patient who has suffered from acute rheumatism goes away from our observation apparently recovered. Perhaps the last notes taken state that the physical signs in regard to the heart are normal—the sounds well-pronounced and no murmurs. Yet when the patient comes under observation again after the lapse of some months—no rheumatic symptoms having been manifested in the interval—there is unmistakeable evidence of mitral regurgitation. The disease processes in the valve and surrounding structures have been long drawn out, slow, insidious, and unmarked by symptoms. By no means infrequently the very period of commencement of the disease has not been betrayed by any symptom whatever.

When there are any signs, physical or rational, which lead to the diagnosis of endocarditis during acute or sub-acute rheumatism I find no reason to modify the treatment by salicylates, by icebag, &c., which I have already described. After the patient has entered into convalescence, however, much may occur to induce or to increase disease in the valvular structures of the heart without the patient being aware that any disease is in process. It follows, first, that a very guarded opinion should be given as to the presence of valvular disease in rheumatic subjects; secondly, that a patient who is the subject of rheumatism should be induced to submit himself to physical examination at fairly frequent intervals, notwithstanding the absence of symptoms. Then come the questions of hygiene and general management in these cases, for medicinal treatment is probably of far less importance than these.

Harley-street, W.

ON THE ABORTIVE TREATMENT OF SUPPURATION OF THE EYEBALL.

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I WISH in this short note to direct attention to a mode of treating suppuration of the eyeball which is not as widely known, judging by the text-books, as in my opinion it merits.

In a large ophthalmic clinic suppuration of the globe is by no means infrequently met with. It is due to sepsis, but the immediate cause may be very varied. Amongst the causes may be mentioned penetrating wounds of the globe with or without the lodgment of a foreign body, abrasions and wounds of the cornea, either accidental or the result of operation, burns of the cornea, &c. Pan-ophthalmitis may

also be due to metastasis from a variety of conditions. The clinical picture of suppuration of the eyeball is characteristic. There are considerable swelling of the lids, enlargement and protrusion of the globe, and swelling of the conjunctiva. In cases arising from metastasis the cornea would be clear and a yellowish appearance denoting the deposit of lymph in the vitreous cavity would have been visible at an earlier period than that just depicted. The pain is most acute and long continued and the condition may be regarded as lasting for at least from four to six weeks.

To relieve pain and to cut short the disease are the ends to which treatment should be directed. In the opinion of many enucleation of the globe is not admissible and it is almost entirely in such cases that the fatal instances associated with excision of the eye have occurred. It was laid down long ago by Von Graefe that the excision of suppurating eyes should be avoided owing to the likelihood of meningitis ensuing. The report of the committee of the Ophthalmological Society (1898) which was appointed to consider the relative values of simple excision of the eyeball and of the operations which have been substituted for it, showed the danger of excision in this condition, but in the large numbers dealt with it would nevertheless appear to be, comparatively speaking, of very infrequent occurrence. It has been held by some that the careful use of antiseptics at the time of operation and afterwards would obviate the danger alluded to. I am hardly, however, of this opinion. For many years antiseptics have been carefully used, as a matter of routine, in my practice in all cases of enucleation, but I have not felt that their employment has given me such a sense of security that I should, if other means are available, excise a suppurating globe, especially when the weight of opinion is strongly against such a course.

A better and safer plan, in my opinion, is to deal with the eye on general surgical principles. An abscess elsewhere would be opened and drained and a similar condition affecting the globe should be treated in like manner. I hardly think that this principle has been, up to now, sufficiently appreciated. Text-books—at least some of them—it is true, make mention of incising the cornea or sclerotic and refer, often vaguely, to evisceration in the treatment of suppuration of the eyeball. The plan here advocated is, however, definite both in procedure and in the results which it affords. It is not an evisceration in the sense that Mules's operation is, for no glass globe is inserted into the scleral cavity. It is more like the procedure advocated by Noyes, Von Graefe, and Bunge, and called by some "exenteration," but it will be observed that no stitches are inserted into the sclerotic and it may be that their non-use has been a reason for the absence of the excessive reaction and the prolonged stay in hospital which have been mentioned by some operators.

I have notes before me of suppuration of the eyeball occurring in the following conditions in which the operation has been done: (1) after ulceration of the cornea; (2) wound of the cornea (in a young girl); (3) after cataract extraction, with lacrymal obstruction; (4) wound of the cornea by a piece of coal; (5) suppuration of the cornea, after injury from blasting; (6) foreign body in the eye; and (7) wound of the sclerotic by a hat-pin. I have, however, done this operation for many years and therefore the total number of instances would be a large one. In all these cases the plan adopted was as follows. Ether having been administered, the cornea, unless it is already destroyed, is divided across by a cataract or Beer's knife. The next step is to remove the remains of the cornea up to the sclerotic, and this can be well done with scissors. Some of the contents of the globe may have escaped by this time, and the remainder, consisting of thickened half-gelatinous-looking masses, can be drawn out with forceps. After removal of these portions, which are readily taken hold of by forceps, Mules's scoop may be used to aid further in the cleaning of the interior of the globe or cotton-wool and forceps can be employed to wipe out the contents. Lastly, sublimate solution is freely syringed into the eye cavity until all the contents have been removed or washed away and only the bared sclerotic remains. Gauze is lightly packed into the eyeball and a bandage is applied. Almost immediate relief from pain follows the operation, with no return, and the swelling of the orbital tissues gradually subsides. The dressings are changed on the night of the operation, and during the next few days the eye is syringed twice a day and the gauze is re-applied. For about the first three days there is some discharge, after that practically none. The patient is even then better than he would have been at the end of some weeks if the disease had been otherwise treated. He will, as a rule, be fit to leave the wards in about 14 days. Ultimately a small button is left in the orbit, which is a better foundation for the adaptation of an artificial eye than if enucleation had been performed. I have seen no ill results follow the operation nor should I apprehend them. It is notorious that sympathetic ophthalmitis does not follow suppuration of the globe, and the procedure here advocated forestalls the completion of this condition. In one case some sloughing of the sclerotic occurred but it did not do more than somewhat delay recovery.

Sheffield.

A CASE OF LYMPHATIC LEUKÆMIA.

BY M. H. SPENCER, M.D. CANTAB.

THE following case seems to be worthy of record on account of the comparative rarity of the affection.

The patient was a tall, well-made man, aged 38 years, who had led a healthy life and had been accustomed to athletic exercises. There was no previous history of malaria or of any other serious illness. In August, 1899, he complained of pain and tenderness in the right heel which interfered with walking. At this time he appeared otherwise to be in perfect health. The pain about the heel soon passed off, but returned again in the autumn, and a physician who saw him, regarding the symptom as a gouty one, placed him upon a somewhat restricted diet. Towards the end of November he began to feel a little poorly, but was able to play golf and follow his usual pursuits. On Dec. 11th I was called in to see him and found him complaining of pain in the left side of the chest and in the left supra-scapular and infra-costal regions. On the previous day he had been driving in a dogcart and as he felt cold he got out and tried to run for some distance, but was unable to do so on account of shortness of breath and a feeling of exhaustion.

Examination revealed no abnormal signs over the heart or lungs. The spleen was considerably enlarged, reaching nearly to the umbilicus, and was rather tender. The liver was also enlarged and was palpable for the breadth of two fingers below the ribs. No enlargement of the lymphatic glands was detected. The urine was loaded with urates but was free from albumin. There was well-marked anæmia. A rough examination of the blood showed an excess of lymphocytes. The pain in the left side which had been first complained of soon disappeared, but the patient developed a troublesome dry cough which kept him awake at night and caused pain in the splenic region. The anæmia increased in intensity, he became very breathless on slight exertion, and rapidly lost strength.

On Dec. 30th an ophthalmoscopic examination revealed numerous blotchy hæmorrhages in both retinæ with some fluffy white patches. There were no marked broadening of the vessels or orange tint of the fundus and no optic neuritis. The temperature soon began to rise at night falling to normal or subnormal in the morning. This type of temperature was maintained until the end. By Jan. 14th, 1900, the weakness had greatly increased and the pallor was intense. There was no dyspnœa whilst the patient was at rest, but he was extremely breathless on the slightest exertion. There was now some enlargement of lymphatic glands in both groins and a few, of about the size of a filbert, could be felt in the axillæ and in the posterior triangles of the neck. Subconjunctival hæmorrhages had occurred in both eyes, but there was no bleeding from the gums or from the stomach or bowels. The gums were pale and slightly spongy and were retracted from the teeth, but the marked gingivitis described in some cases of lymphatic leukæmia was not present. There was tenderness on pressure along the anterior surfaces of the tibiæ and over the manubrium sterni. At night the patient suffered from profuse perspirations and the cough continued, causing at times troublesome retching. In the absence of any physical signs over the lungs it was thought that this dry cough might be due to pressure from enlarged bronchial glands. On Jan. 18th Dr. Louis Jenner, who kindly examined the blood, made the following report: "Without counting it is obvious that the white cells are greatly in excess of normal.

A differential count shows that the fine granulated oxyphils (polymorpho-nuclear-neutrophiles) are present in a ratio of 34 per cent. (normal, from 70 to 72 per cent.). The lymphocytes number 63 per cent. (normal, from 22 to 24 per cent.); these are of various sizes. The eosinophiles number 2·5 per cent. (normal, from 2 to 4 per cent.); the mast cells number 0·25 per cent. (normal, anything to 0·5 per cent.). There were, however, many destroyed leucocytes which I could not classify, but which for the most part were probably lymphocytes. There were a great number of nucleated red cells." The main features, then, of the blood were (1) a diminution in the number of the ordinary leucocytes (fine granulated oxyphils); (2) a great increase in the lymphocytes; and (3) the presence of a number of nucleated red cells.

The progress of the case was now steadily towards a fatal termination. On Jan. 25th there was some free fluid in the abdominal cavity. The size of the liver had increased, and the lower edge reached as far as the umbilicus. The spleen remained about stationary in size. There were considerable loss of flesh and profound exhaustion. There were several syncopic attacks. The mind remained clear till within 24 hours of his death which occurred on Feb. 2nd, and which was preceded by several hours of unconsciousness. The patient was treated with arsenic from the first, but the drug seemed to have no effect whatever upon the course of the disease. There was no post-mortem examination.

The reported cases of this form of leukæmia vary considerably in the clinical picture they present. In some the enlargement of lymphatic glands is a prominent feature; in others, the gums have been much affected and an acute stomatitis has been the first symptom complained of. They, for the most part, however, seem to run an acute course to a fatal termination, and the case I have recorded is no exception to the rule, for my patient died within two months of seeking medical advice. The enlargement of the spleen is generally only moderate in extent. It seems probable that the pain in the heel and pains in the left side of the chest which the patient complained of may have been dependent upon defective elimination and excess of uric acid. The point of interest in connexion with the blood is the presence of a large number of nucleated red cells. In the splenomedullary form of leukæmia their presence is the rule, but in the lymphatic form they are most generally absent. The excessive enlargement of the liver accompanied by moderate ascites is also a feature of interest in the case.

North Kensington.

NOTE ON THE SUPERFICIAL AND DEEP REFLEXES.

BY JOHN M. MACCORMAC, M.D. DURH.,
HONORARY PHYSICIAN TO THE VICTORIA HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, BELFAST.

SUPERFICIAL and deep reflexes as an additional means in the diagnosis of the principal forms of mental disease comprise a subject which, so far as I am aware, has not received attention in the United Kingdom. The conclusions I have arrived at after careful observations for many years are much in harmony with those of Agostini.

1. Let me first say a word on the subject of crossed knee-jerks. If the patellar tendon on one side be struck the opposite leg will be adducted mainly by the action of the crureus and vastus internus, which muscles are seen to contract even when the movement is slight. This patellar jerk is a true reflex, and I have observed that in certain forms of sclerosis of the spinal cord a slight percussion will cause the knees to knock together and at the same time the arms are adducted. These actions soon lessen and pass into a state of tremor which gradually disappears. 2. My observations on the superficial and deep reflexes in their relation with the modification of painful sensibility in mental disorders have shown me that the formulæ of Agostini correspond in a general way to the state of the reflexes in each of the principal forms of mental disorder and in consequence are valuable in the diagnosis of these affections.

In general paralysis of the insane the condition of the reflexes varies in the different stages of the disease. In the initial stage of this disease there is generally a weakening of painful sensibility and of the cutaneous reflexes with the exception of the plantar reflex. On the other hand the deep reflexes are exaggerated. In the second stage of the disease the plantar reflex is very markedly exaggerated and the other reflexes both deep and superficial are increased, the tendon reflexes being still more marked than in the first stage. In the third stage of the disease all the reflexes become weaker until they finally disappear. During an epileptiform attack the superficial reflexes are decreased or abolished, but the tendon reflex is exaggerated, and is often accompanied by fibrillary contractions which may be transmitted from a limb to the trunk and then may pass to the limbs of the opposite side.

In epileptic insanity sensibility to pain as well as the reflexes produced by stimulation of the skin and mucous membranes are generally lessened, but the tendon reflexes are normal. After some convulsive attacks the tendon reflexes are increased, whilst the cutaneous reflexes are considerably weakened, with the exception of the plantar reflex, which is augmented and may be associated with trembling or even with epileptoid movements of the foot. Hypochondriacs and neurasthenics generally present an increase of all reflexes both superficial and deep. In hysteria there is a decrease of painful sensibility and of the cutaneous reflexes. In alcoholic paralysis painful sensibility and tendon reflexes are exaggerated, whilst the cutaneous reflexes (except the plantar reflex) are weakened. In acute mania the reflexes are normal. In secondary dementia all reflexes are exaggerated. In melancholia painful sensibility and cutaneous reflexes are normal, whilst the tendon reflexes are exaggerated. In the stage of melancholic stupor painful sensations, which on superficial examination may appear feeble, are in reality normal, the cutaneous reflexes are feeble, and the tendon reflexes are exaggerated.

From the above statements we see how very differently tendon reflexes and cutaneous reflexes act, and this we can understand when we consider that the two acts of reflexes are represented in the spinal cord by separate systems, one of which may be affected while the other remains normal.

Belfast.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

EXTRAORDINARY CASE OF THE LOSS OF BOTH EYES, ONE AFTER THE OTHER, FROM SIMILAR ACCIDENTS.

BY ALBERT BENTHALL, F.R.C.P. EDIN.,
HEAD OFFICE MEDICAL OFFICER OF THE OCEAN ACCIDENT AND GUARANTEE CORPORATION.

IN the year 1896 and also this year, claims having been made, I was asked to examine the injured person and to report. For this purpose I held various consultations with the surgeons connected with the case and the following history is compiled from my notes.

On Jan. 3rd, 1896, a grocer's assistant, aged 41 years, when in the act of washing his face about 9 A.M., accidentally "put his finger in his right eye." On the 4th Mr. Llewellyn of Whitechapel was called in and he found "laceration of the cornea with effusion of blood under the conjunctiva." Suppurative inflammation of the eyeball resulted and on the 13th the eye was enucleated by Mr. Waren Tay at the London Hospital, the house surgeon in charge of the case being Dr. F. B. Rutter.

On Feb. 24th, 1900, at 7 P.M., the same man in washing his face struck his left and only remaining eye with a finger nail, this time not only lacerating the cornea but injuring the deeper structures, for on Dr. Sullivan of Holloway-road being called in he found "a penetrating wound of the cornea with the iris prolapsed and entangled in the wound." The patient was sent again to the London Hospital and iridectomy was performed by Mr. Waren Tay, Dr. Russell Howard being the house surgeon in charge. On March 19th, the day of my examination in consultation with Dr. Howard, there was a sloughing wound of the cornea, nearly in the centre of the pupil, rather over a sixth of an inch in diameter,

the rest of the cornea being opaque and the conjunctiva congested. Mr. Waren Tay had not, on the date of my examination, decided to enucleate, desiring to give the patient every chance of retaining some kind of vision if, by any possibility, such could be obtained by operation a year or more hence. I reported the whole facts to the Ocean Accident and Guarantee Corporation and the directors at once decided to admit and pay the claim, made under the general accident policy held by the patient, without keeping him in suspense until the sight of the eye was absolutely proved to be lost for ever.

This particular accident as occurring to one eye is not uncommon, but in all my experience I have never examined or heard of a case in which a man has lost the sight of both eyes from two separate similar accidents such as are here recorded.

Cockspur-street, S.W.

DEATH FROM CARBON DIOXIDE POISONING IN A BREWERY.

BY W. SCOTT THOMSON, M.R.C.S. ENG.,
ASSISTANT SURGEON, RHYMNEY WORKS.

ON March 2nd an inquest was held at Rhymney, Mon., concerning the death of a well-built, sober, industrious man, 25 years of age, employed in the Rhymney Brewery. It appeared that his duty on the day when he met his death (Monday, Feb. 26th) was to clean out a vat, or "piece" in brewing parlance, as he had been accustomed to do once or twice a week for the past six months. The vat in question was eight feet in depth and six feet in diameter, having a manhole 18 inches square, an almost obsolete pattern, the modern one being large and shallow. The vat was used for storing beer prior to "racking." The beer was drawn off on the previous Saturday morning, leaving a sediment or "slummage" of a few inches in depth at the bottom. The vat was then flushed with water and the cover put on the manhole some time in the afternoon—it is said by the deceased man himself—and it remained closed till 6.15 A.M. on the Monday. The object of covering up the vat was to facilitate the subsequent cleaning, as otherwise the sides became dry. After removing the cover and allowing the hose to run into the vat for 10 minutes the man was seen to enter the vat with a lighted candle in his hand. About 20 minutes or 25 minutes later a cellarman, wishing to borrow the mop, called out to him and, receiving no answer, went up to look for him when he saw him lying on the bottom of the vat face downwards with the ladder, which had fallen on its side, resting up against his body. The candle was subsequently found on the bottom. This is an important fact, as it indicates that the man was overcome before or shortly after he had reached the bottom—the custom being to stick the candlestick into the side of the vat, a spike being attached to it for that purpose. Having called for help and procured another ladder from an adjacent office the cellarman descended the ladder, followed by another man. They hitched a rope round the deceased's arm and with the aid of some other men got him out of the vat in about three minutes when I was immediately called and arrived on the spot within a quarter of an hour. The condition of the body was as follows. The heart had ceased to pulsate, there were no visible respiratory movements, and there was some frothy fluid about the mouth and the nostrils. The skin was pale, the lips and eyelids were slightly cyanosed, the eyes were half open, the pupils being widely dilated, and the expression of the face was calm and placid. The anterior surface was cold, whilst the back was fairly warm and there were no marks of injury. After having the man suspended head downwards, when a small quantity of fluid, not of a frothy character, escaped from the mouth, I performed artificial respiration by the Silvester method for 40 minutes but without success. During the manipulation froth exuded from time to time from the nostrils.

An examination of the vat showed, besides the candlestick on the bottom already mentioned, a certain quantity of water which, owing to a warp, was in some places three or four inches in depth and in others entirely absent, and it was in a pool that the deceased's body was found with the face downwards. In my evidence I stated that all the signs pointed to death from suffocation, but whether the man had been rendered insensible only by the carbon dioxide and then drowned or had been poisoned by the carbon dioxide only I could not positively say. The latter, however, was quite compatible with the signs. The coroner (Mr. J. B. Walford) in a very able summing-up dismissed the idea of death being due to syncope or a fall from the ladder, there being no evidence whatever that the man had suffered from heart disease, and there were no marks of injury on the body or signs on the bottom of the vat of the ladder having slipped. He therefore considered it to be a case of poisoning by carbonic acid gas. This, however, does not seem so simple, as two men went down within half an hour at the most and stated that they felt no inconvenience from the fumes; but probably the fall of the man and his pulling the ladder down disturbed the dense layer of carbon dioxide, which, being heavy, is always most concentred in the lowest part of a mixed atmosphere. It was also stated by the widow of the deceased that he had frequently complained to her of the effects of the fumes, so much so that he said it was not safe to go into the vat without a man being outside to watch. The two witnesses who pulled the body out had on many occasions cleaned the vat and they stated that it did not affect them. It seems hardly likely that the deceased had any idiosyncrasy, as the effect of carbon dioxide is chemical rather than physiological. Would a post-mortem examination and a spectroscopic examination have been of any scientific value? Hardly; and, moreover, as the coroner said, a medical man has a fixed legal fee of a guinea, while an analyst can charge what he pleases. The most important point about this inquest, so far as the public is concerned, is the prevention of such accidents in the future. It is the rule in most breweries—and in this brewery at Rhymney it is the rule with regard to the larger vats—to have a man placed outside as a watch and to lower a lighted candle before entering the vat. But is that rule always put into practice? And surely the fact that a candle will burn in an atmosphere containing 10 per cent. or 12 per cent. of carbon dioxide, whereas death will occur in one containing only 4 per cent. or 5 per cent., makes the candle test no sufficient guarantee of the fitness of an atmosphere for respiration. The jury brought in a verdict of "Death by misadventure," and added a rider that more stringent precautions ought to be taken to test the purity of the air and that a watch should always be placed outside the vat.

Rhymney, Mon.

SUPRAPUBIC CYSTOTOMY PAINLESSLY PERFORMED AFTER THE HYPODERMIC INJECTION OF EUCAINE.

BY T. VINCENT JACKSON.

ON Feb. 20th, 1900, I had to perform suprapubic cystotomy in the case of a man, aged 50 years. The reasons for this operation need not be stated. As the general condition of the patient seemed unfavourable to the employment of a systemic anæsthetic I determined to test the efficacy of local anæsthesia. The man's face was covered by a towel and in two or three points over the line of the incision which would have to be made above the pubes 40 minims in all of a 7½ per cent. solution of hydrochloride of eucaine (equal to two and two-third grains of the drug) were hypodermically injected into the tissues. A short period was allowed to elapse and then the operation was commenced and was finished by the insertion of three deep and two superficial catgut sutures, which when tied brought the soft parts together above a drainage-tube placed within the bladder, and the dressings were then applied. During the operation the forefinger of an assistant was passed into the rectum to raise up the floor of the bladder. When all was completed I removed the towel from the man's face and asked him if he had felt anything, to which he replied, "I felt a finger in the fundament."

I publish this case as evidence of the great value which the employment hypodermically of a solution of eucaine may be in the performance of a major operation which can be rapidly executed.

Wolverhampton.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

ST. GEORGE'S HOSPITAL.

TWO INTERESTING CASES OF HERNIA.

(Under the care of Mr. G. R. TURNER.)

CASE 1. *Femoral hernia in a boy, aged six years.*—The patient was admitted into St. George's Hospital with a swelling of the size of a pigeon's egg in the left groin, seemingly reducible into the abdominal cavity and apparently with some slight impulse on coughing. There was enlargement of the inguinal glands above and below Poupart's ligament and the child had obviously been circumcised not long ago. Both testicles were in the scrotum; the hernial swelling was said to be increasing in size. The hernia on operation proved to be of the femoral variety containing omentum. A radical cure was performed, a flap from the pectineus muscle being utilised in the way that Mr. Watson Cheyne has suggested. The boy made an uninterrupted recovery.

CASE 2. *Double femoral hernia in a man.*—The patient, a labourer, aged 46 years, was admitted into St. George's Hospital on May 31st, 1898. He stated that he had had a reducible lump in the fold of the left groin for 12 months. This had increased in size somewhat suddenly of late. He was subject to bronchitis in the winter months, but otherwise he had enjoyed good health. He had neither lost nor gained flesh recently. He had never worn a truss. There was a smaller swelling in the right groin. On admission the patient was found to have a femoral hernia of about the size of a Tangerine orange which was readily reducible on the left side. He had a smaller right femoral hernia and both inguinal rings although unoccupied by hernia were very capacious. On June 3rd Mr. Turner operated on the left side, doing a radical cure of the femoral hernia and suturing the inguinal ring with kangaroo tendon at the same time. Three weeks later he did the same on the right side. The femoral herniæ on both sides were omental; no gut was down on the left side at the time of operation, although previously this had probably been the case. The patient was discharged wearing a double truss large enough to support both inguinal and femoral rings.

Remarks by Mr. TURNER.—Femoral hernia in a boy, aged six years is sufficiently rare to be worthy of record. Double femoral hernia in an adult man is not often seen. It was associated in the case recorded above with dilatation of the inguinal rings, although no hernia was present in these situations. It is curious that on both sides the hernia should have selected the crural canals when an easy inguinal route was open to them. As a general rule after the operation for radical cure of a hernia I do not advocate the wearing of a truss, but in this case the rings were alone dealt with and the truss is worn as a matter of prevention of possible hernia in the future.

GREAT YARMOUTH GENERAL HOSPITAL.

A CASE OF SUPPURATIVE OTITIS; MASTOID DISEASE; CEREBRAL ABSCESS; NECROPSY.

(Under the care of Dr. HENRY BLAKE.)

FOR the notes of the case we are indebted to Dr. Alexander Goodall, house surgeon.

A youth, aged 17 years, was admitted into Great Yarmouth General Hospital on Sept. 22nd, 1899, under the care of Dr. Blake. The patient complained of pain and discharge from the left ear of about three weeks' duration. His family history was good, his home surroundings were comfortable, and he had not suffered from any previous illness of importance. His intelligence was not of a high order and it was difficult to get an account of the onset of his illness. On admission the temperature was 100·4° F. There was a good deal of purulent discharge from the left ear and a small polypus could be seen growing from the posterior wall of the meatus. There was no tenderness over the mastoid. The pulse was 72 per minute and in other respects the patient seemed to be in good health.

The ear was douched with boric lotion and insufflated with iodoform. Chromic acid was applied to the polypus. On Sept. 25th the temperature rose to 104·5°, but after cold sponging it fell to 100°. For the next three weeks the temperature was very irregular, ranging from 98·4° to 103°, but the general condition seemed to improve and operation was deferred. On Oct. 2nd the patient vomited and he began to suffer from severe paroxysmal headaches. On the 16th the mastoid was trephined and a few drops of pus escaped. A communication was made between the mastoid antrum and the meatus. The temperature, however, remained irregular, ranging from 100° in the morning to 103° in the evening, and on the 24th the patient had a rigor. On the 28th the mastoid opening was enlarged and some bony detritus was cleared out. On the 30th the temperature rose to 102°. There were swelling and tenderness along the line of the internal jugular. On the next day the swelling and tenderness had extended along the line of the subclavian vein. Carbolic fomentations were applied and in two days these symptoms had subsided. On Nov. 1st, and again on the 3rd and the 5th, the patient vomited. On Nov. 1st the temperature fell to 97°, but on the 2nd it rose to 102°. The patient was now rather drowsy and his cerebral processes became very slow. On the morning of the 6th the temperature was normal and the pulse rate was 60. At 10 A.M. the temperature fell to 96° and the pulse rate to 48. There were slight paresis of the right facial nerve and a slight tendency to ptosis of the left eyelid and the left pupil was dilated. The fundus oculi looked healthy. In the evening Dr. Blake trephined over the temporo-sphenoidal lobe, entering the trephine at a point about one and a quarter inches behind and above the centre of the external auditory meatus. An incision was made in the dura mater and an exploring needle was inserted into the temporo-sphenoidal lobe. Pus was at once found and about one ounce escaped. The opening was enlarged with sinus forceps and a rubber tube was inserted and stitched to the scalp. On the next morning the temperature was 97° and the pulse was 64. To ensure better drainage the rubber tube was replaced by a silver cannula. In the evening the temperature had risen to 102° and the pulse-rate to 84. The following morning the temperature was 101° but it gradually rose to 106·2° and the patient died in the afternoon.

Necropsy.—A post-mortem examination was made on the following day. There was a small ragged opening about the middle of the inferior temporo-sphenoidal convolution where the tube had been inserted and around the opening there was an area of about a square inch where the brain substance was very thin and friable. On cutting into the brain an abscess containing a quantity of pus was found in the temporo-sphenoidal lobe. The cavity had a diameter of one and three-quarter inches and projected into the descending horn of the left lateral ventricle. The abscess cavity was lined by a pyogenic membrane one-sixteenth of an inch in thickness, which was very easily detachable from the brain substance. There was no thrombosis of either the internal jugular vein or the lateral sinus and there was no indication of meningitis.

Remarks by Dr. GOODALL.—The diagnosis when the patient first came under observation was septic absorption from purulent otitis and it was only the continuation of the symptoms after douching, &c., that indicated mastoid disease. After the second operation there was reason to believe that there was venous thrombosis, and it was only the rapid extension of the condition that prevented operation. Subsequent events proved the decision to defer operation to have been fortunate. The most interesting feature of the case was the fact that the abscess, which had a thick pyogenic membrane, must have existed for weeks before it gave rise to any symptoms. The patient's mental processes were certainly slow, but it so happened that his sister, who was in hospital at the same time suffering from chlorosis, showed much the same peculiarity. It was, therefore, impossible to determine when the slow cerebration became pathological. Definite symptoms of brain abscess only showed themselves two days before the boy died. I am indebted to Dr. Blake for his kindness in allowing me to publish the case.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Rupture of the Œsophagus caused by Vomiting.—Sarcoma of the Gastro-hepatic Omentum.

A MEETING of this society was held on March 27th, Dr. F. W. PAVY, the President, being in the chair.

Dr. R. L. BOWLES and Mr. G. R. TURNER communicated a paper on a case of Rupture of the Œsophagus caused by Vomiting, together with a table of 16 other cases hitherto recorded. The patient was a woman, aged 62 years, who, after taking over-night a pill of aloes and rhubarb, which freely purged her, was sick on taking some milk. She vomited four or five times and still feeling ill took a tumblerful of salt-and-water "to clear the stomach." The vomiting caused by this was followed by collapse of an alarming nature and epigastric pain, and she complained of agonising pain on swallowing. All vomiting ceased after the sudden onset of the pain and collapse. Under the influence of hypodermic injection of morphia her condition somewhat improved. Auscultation was difficult, but as far as could be ascertained the cardiac sounds were absent and the chest was hyper-resonant. Emphysema of the neck, soon extending to the face, appeared some hours before her death, which occurred 22½ hours from the commencement of the attack. The post-mortem examination showed emphysema of the chest and neck, chiefly on the left side, and left pneumothorax, and one and a half inches above the diaphragm there was a longitudinal rupture of the œsophagus which was otherwise healthy. Some remarks were made on the diagnosis of this form of accident from perforation of the stomach, the duodenum, rupture of an aneurysm, angina pectoris, severe colic, and irritant poisoning. With reference to the surgical treatment allusion was made to the possibility of exposing the œsophagus in the posterior mediastinum without injury to any important viscus. Drainage of the posterior mediastinum and suture of the rupture were regarded as feasible and an attempt at such treatment was fully justified in what was otherwise a necessarily fatal injury. The literature on the subject was analysed and 16 other cases were tabulated. This class of injury, though rare, was not so rare as was usually supposed. It was an accident that might be overlooked and sometimes confused with post-mortem softening.—Dr. CYRIL OGLE had made the necropsy on the case and regretted that the specimen had been lost. There was no doubt that the rent had occurred before death. The emphysema and pneumothorax were beyond doubt. As to the œsophageal rent, there were no signs of any disease in the gullet; it was softened a little in the lower part, but that was due to post-mortem softening.—Dr. H. D. ROLLESTON referred to the very exceptional character of the accident. In the forty-fifth volume of Transactions, under the heading Peri-œsophageal Abscess, he had published an example of rupture. The patient was a coachman, aged 56 years. The rupture had occurred when he was bending to clean a carriage and he died 48 hours afterwards. The posterior mediastinum contained the cavity of an abscess. He referred to the definite situation in which the rupture was always found. It was always in the lower third. This was strange because the weakest part was found where the pharynx joined the œsophagus. Possibly this situation was explained by the lower third being composed of smooth muscular tissue only, and here it was firmly fixed to the diaphragm. He believed that rupture was probably preceded by a small ulceration and this was most frequently found in the lower third. The rupture might destroy the evidence of ulceration.—Mr. STANLEY BOYD mentioned a case recorded by Tändler[1] of a lad, aged 17 years, suffering from a contused wound of the arm with septic complications. On the fourth day vomiting set in and a transverse tear of the œsophagus took place, the contents of the stomach being extravasated into the pleura. He also referred to two cases which he (Mr. Boyd) had recorded in the Transactions of the Pathological Society of London, in which, although a committee were of the opinion that the lesion was due to post-mortem softening, he still believed the apertures were due to rupture. There were clinical grounds in support of this view.—Mr. THOMAS BRYANT referred to the rarity of such cases. He had met with three or four cases due to external injury, but this was, of course, a different condition. He mentioned a case which had given rise to difficulty at the time, but which in the light of the cases mentioned by Dr. Bowles and Mr. Turner was probably one of rupture of the gullet. The patient was an imbecile who while in good health was suddenly seized with severe vomiting and collapse. She was thought to have swallowed a piece of wood, but no impediment could be detected on passing a bougie. After death nothing was found excepting a vertical rupture in the lower one-third of the gullet. The question was raised whether it had been done by the instrument, but he had no doubt it was a case of the kind under discussion.—Dr. R. L. BOWLES, in replying, mentioned that the pulse of the patient was only 50 and the arterial tension, in spite of the collapse, was high. This was probably explained by irritation of the vagus nerves. The position of the rupture in the lower one-third was, he believed, partially explained by this being the narrowest portion of the tube. In some experiments which he and Mr. Turner had performed, rupture of the gullet always occurred vertically; he believed that leaden pipes when bursting always split longitudinally. He thought the gullet was not examined as often as it should be post mortem.—Mr. G. R. TURNER was inclined to agree with Dr. Rolleston in his explanation of how the rupture occurred, but could not believe that previous ulceration was necessary. He had been surprised how easily the healthy gullet ruptured in his experiments. He agreed that Mr. Stanley Boyd's cases were probably rupture rather than post-mortem softening. He was inclined to think that the accident was a little more common as a cause of sudden death than was generally believed. In regard to possible surgical treatment, since there was already pneumothorax it was not necessary to avoid the pleura.

Mr. A. PEARCE GOULD read a paper on a case of Sarcomatous Tumour of the Gastro-hepatic Omentum removed by Operation, with remarks on the Diagnosis of such Tumours. The patient was a man, 38 years of age, who came under his care in October, 1895, for a large solid abdominal tumour which had been noticed for about 12 months. When operated upon it was found to occupy the gastro-hepatic omentum and the stomach was displaced into the pelvis. The tumour, which weighed 21 lb., was enucleated from the omentum. Microscopic examination showed it to be a spindle-celled sarcoma with extensive hæmorrhages into its tissue. The patient, who was brought before the society, made a good recovery and had remained well since without sign of recurrence, a period of four and a half years. Mr. Gould drew attention:—1. To the extreme rarity of primary tumours in the gastro-hepatic omentum. He had found a record of only one other case. 2. To the means of diagnosing a tumour in this situation. The chief clinical feature about tumours in the small omentum depended on the fact that the stomach was pushed downwards and therefore the usual epigastric resonance was wanting. 3. To the very great elongation and displacement of important structures which occurred without serious symptoms and was recovered from without ill effect. 4. To the long period of freedom from recurrence after removal of a sarcoma of apparently malignant character. The patient, the tumour, and a microscopic section of the latter were shown.—Mr. THOMAS BRYANT recalled a case in 1885 of a large abdominal tumour weighing 50 lb. occurring in a middle-aged man. It was non-lobulated and of slow growth. It was thought at first to be fluid. Considerable difficulty was experienced in making out its boundaries and origin; it turned out to be an enormous lipoma with very large veins. The needle used for puncturing it came out quite clean but covered with oil. This was one of the best evidences of a lipoma.—Mr. STANLEY BOYD referred to the difficulty in diagnosing the locality of such tumours. He mentioned the case of a youth, aged 20 years, who presented a tumour of the upper abdomen which pushed up the heart. It was very tense and rounded, like a hydatid of the left lobe of the liver. It moved on respiration, but not as a hydatid would. An exploratory operation was performed and it turned out to be a retro-peritoneal cyst. 70 ounces of red-brown fluid were drawn off, which digested starch and albumin, and which showed that it was a cyst of the pancreas. This tumour certainly obscured the stomach, yet it was not a tumour of the small omentum, so he could not agree with

[1] Deutsche Zeitschrift für Praktische Medizin, No. 52, 1878.

the statement that displacement of the stomach resonance was pathognomonic of tumours in the latter situation.—Mr. PEARCE GOULD, in reply, remarked that the case just referred to was somewhat unusual. All tumours of the small omentum must push down the stomach, and the resonance of that organ would not only be obscured but would re-appear below.

MEDICAL SOCIETY OF LONDON.

The Chemistry of Gout.

A MEETING of this society was held on March 26th, Dr. F. T. ROBERTS, the President, being in the chair.

Dr. A. P. LUFF read a paper on the Gelatinous form of Sodium Biurate and its bearing on the Treatment of Gout. It was, he said, now a universally admitted fact that the deposition of sodium biurate was intimately related to the gouty paroxysm. He strongly shared the view of the late Sir William Roberts that uric acid when first introduced into the blood existed solely as sodium quadriurate. It was, however, a very unstable body and soon changed into sodium biurate, which at first assumed the gelatinous modification; and this if not eliminated in the urine was slowly or rapidly (according to circumstances) changed into the almost insoluble crystalline form, which by its deposition in the tissues caused the gouty paroxysm. If this change from gelatinous to crystalline form could be delayed the gouty attack could be delayed or postponed. He had for some time been studying the effects exerted by various drugs on the conversion of the biurate into the crystalline form. He had shown on previous occasions that the conversion was accelerated when the alkalinity of the blood was increased by means of sodium bicarbonate, whereas the conversion was delayed and diminished when potassium bicarbonate was used. He had now carried out a similar series of experiments the results of which showed: (1) that sodium salts considerably accelerated the conversion of the gelatinous biurate into the crystalline variety and that their employment in the treatment of gout was apparently not desirable; (2) that potassium salts delayed the conversion of the gelatinous biurate into the crystalline form and also that when the conversion was once started it was slowed by the presence of these salts; (3) that lithium salts, although they did not delay the initial conversion of the gelatinous biurate, yet when the conversion was once started it was slowed by the presence of these salts and especially by the lithium carbonate; (4) that piperazine did not delay the initial conversion of the gelatinous biurate and but slightly slowed the conversion when once started; and (5) that lysidine, although it delayed the conversion of the gelatinous biurate into the crystalline form, yet when the conversion was once started it had practically no effect in slowing it. From the results of these experiments it appeared that for the special purpose referred to in the treatment of gout the potassium salts were the most useful, that the lithium salts ranked next, and that piperazine and lysidine were not nearly so useful. These results were entirely in accord with his clinical experience. He did not for one moment wish to contend that the beneficial action of the salts of the alkali metals in the treatment of gout was to be solely gauged either by their solvent action on deposits of sodium biurate or by their inhibitory action on the conversion of the gelatinous biurates into the crystalline form. Undoubtedly many of them were extremely useful in the gouty state by their stimulating effect upon metabolism, by their remedial action upon the gastric and hepatic functions, by their diuretic action, and by diminishing the acidity of the urine. He feared that the purport of a paper published by him in THE LANCET of June 11th, 1898, had been somewhat misunderstood in this respect. He did not, however, question—still less deny—the utility of many of those drugs in the therapeutics of gout, but he wished to point out that the oft-repeated statement that most of these drugs were useful for their great solvent action on gouty deposits was a loose and erroneous statement which it would be wiser in future to avoid. Another important point demonstrated by his recent experiments was that the higher the alkalinity of the blood from the presence of sodium bicarbonate the more rapid and the more complete was the conversion of the soluble gelatinous biurate into the comparatively insoluble and crystalline forms. This point was of great interest, since he believed that the alkalinity of the blood of gouty patients was always higher than the normal alkalinity of blood. This view was opposed to the prevailing one that gout was associated with an "acid dyscrasia." This latter opinion, however, so far as he could ascertain, was a pure assumption and had apparently never been based upon any actual determinations of the alkalinity of the blood of gouty individuals. It received its first shock five years ago when Klemperer showed by actual determinations of the blood of gouty subjects that the alkalinity was not below that of healthy blood. He had since made a number of determinations of the alkalinity of the blood of healthy and gouty individuals with the result that the alkalinity was higher than the average alkalinity of the blood of healthy individuals. The alkalinity of the blood of healthy adults varied from 0·161 to 0·185 per cent. of sodium carbonate, with an average of 0·167 per cent. The alkalinity of the blood of gouty patients varied from 0·193 to 0·251 per cent., with an average of 0·217 per cent., which was nearly one-third higher than that of normal blood. Since this increased alkalinity of the blood was due to a higher proportion of sodium carbonate or bicarbonate, and since these substances accelerated the conversion of the gelatinous biurate into the crystalline variety, and therefore the precipitation of the latter, it was intelligible why such blood was prone to hasten and to augment the formation of gouty deposits. The inference was, therefore, that this increased alkalinity determined the gouty paroxysm.

Dr. WILLIAM BAIN (Harrogate) read a paper on the Action of Various Drugs and Diets on the Excretion of Nitrogen in Gout. The object of his series of observations was to determine if possible the variations in nitrogenous elimination occurring in a case of gout under ordinary conditions and to note the effect of different diets and certain drugs on such variations. For this purpose urea, uric acid, the alloxur bases, and ammonia were estimated in the urea to serve as a measure of the total nitrogenous changes; the uric acid and alloxur bases to serve as a possible sign of modified production of these bodies; and the ammonia as an indication of the general amount of inorganic acid dealt with during the day's metabolism. With regard to the origin of uric acid there were two alleged sources: (1) it might be a derivative of the alloxur bases combined within the molecule of the nucleoproteid of cells or similar substances in the food; and (2) it might be produced by synthetic processes in the liver or elsewhere from simple nitrogenous compounds, such as ammonia. The patient, a well-built man, aged 65 years, was admitted into the Leeds General Infirmary in November, 1899, under the care of Dr. A. G. Barrs (to whom Dr. Bain was indebted for the opportunity of investigating the case). The family and previous histories were unimportant. The patient had been suffering from severe and constantly-recurring attacks of gout for five years and there were very obvious gouty changes in the hands, feet, and other joints. He had no pain in them excepting during the inflammatory attacks. The large amount of deposit in a short time was specially remarkable. The abstemious habits of the patient and the absence of gout in the family history were also noteworthy. After describing the methods employed in estimating the various substances Dr. Bain exhibited his results in the form of a table. After sodium salicylate there was only a slight increase in the uric acid. Under guaiacum uric acid was markedly increased. It was thought that this drug probably acted on the uric acid stored in the body rather than by increased production. Iodide of potassium caused an increase in the urea and uric acid. Vegetable diet increased the uric acid. Dr. Bain also made reference to the experiments of Minkowski which added much interest to his estimation of the alloxur bases. This observer had administered adenin to four dogs in doses varying from a quarter to two grains several times a day. After two grains vomiting ensued and the other symptoms noted were violent action of the heart, a heaving pulse, with an increase in blood-pressure. The urine contained leucocytes, albumin, casts, and epithelial cells. Three of the animals were killed about the fourth day and the other one died. Post mortem crystals of biurate were found deposited in the renal tubules. It was an interesting fact that this train of symptoms with deposition of biurate could be experimentally induced by one of the alloxur bases, and it suggested that one or more of them might be a factor in the evolution of gout. Uric acid, on the other hand, had not been shown by experiment to produce any such symptoms. With advancing knowledge it was possible that uric acid

might be relegated to a secondary position in the causation of gout. It was to be regretted that this line of research had not been extended and it was unfortunate that pure adenin was almost impossible to obtain. Apart from xanthin the amount of alloxur bases appearing in the urine was so exceedingly small that their separate estimation was a matter of great difficulty. Dr. Bain suggested the possibility that the retention of adenin within the system might determine the deposition of biurate in the tissues.

Dr. A. E. SANSOM confessed that he was still in a maze of doubt as to the pathology of gout, though experiments seemed to be elucidating some of the problems. There was no doubt that the deposit of urates was the cause of a gouty attack; but why should it, he asked, be afterwards got rid of in some cases but not in others? The absence of pain, too, in some cases was inexplicable. It seemed to him doubtful whether those violent and destructive paroxysms of acute gout sometimes observed could be explained wholly and solely by sodium biurate. Surely there must be something that was associated with it which prevented metabolism. The subject of treatment also was beset with difficulty. If sodium salts promoted and potash salts delayed deposition why was it that they got such good results from the two together? Piperazin in his experience did seem to do good in some cases. Laboratory experiments were very useful, but they were still a long way off the truth.

The PRESIDENT congratulated Dr. Luff on his welcome and interesting researches. He had never thought very much of piperazin or lysidin in the treatment of gout and he had mostly come back to the potash salts or a combination of potash and soda. Dr. Bain's case was an interesting one and he remembered to have met with a case resembling this in the extreme gouty development without anything to account for it, for the patient was both a teetotaler and a vegetarian.

Dr. A. P. LUFF, in reply, thought that the disappearance of the deposit in some cases and not in others depended upon the alkalinity of the blood. If this was high then the blood could not remove the deposits. The presence or absence of pain in different cases depended, he believed, upon the rapidity of deposition. It was the suddenness of the deposition which caused the pain. Referring to the necrosis of certain tissues he doubted whether such a process occurred in cases of true gout. He had never seen necrosis of cartilages in true gout, and he thought it possible that the alleged cases were rheumatoid arthritis on which acute gout had supervened. Dr. Bain's case had been very carefully investigated. He would like to know what were the relative lengths of time for the administration of the different substances. He thought that in so many experiments in one patient the gouty state must have been in different phases at different times. The fact that guaiacum eliminated uric acid was quite in keeping with his experience and that of Sir Alfred Garrod. Given in the form of resin it was certainly a prophylactic.

Dr. BAIN, in reply, mentioned the doses and duration of the administration of the different drugs. There was an interval of three days between each, but the patient began by being put on a fixed diet for nine days. He thought the question of pain would depend upon the structures that were involved. As to the necrotic changes he quite agreed with Dr. Luff. Dr. Chalmers Watson had found in chronic gout a myelocyte which was not to be found in normal blood, but Dr. Bain had not found this in one case which he had examined. He quite agreed with Dr. Sansom that there must be something besides the biurate to produce gout and he had suggested that it might be adenin. The marked effect which this had had upon the blood-pressure and the occurrence of uric acid in the kidneys of Minkowski's dogs were arguments in favour of this view.

CLINICAL SOCIETY OF LONDON.

A Case of Dermoid Cyst within the Spinal Canal.—Reduction of the Deformity of Spinal Caries by Manual Rectification.

A MEETING of this society was held on March 23rd, Sir R. DOUGLAS POWELL, Bart., President, being in the chair.

Dr. W. HALE WHITE and Mr. A. D. FRIPP communicated a paper on a case of Dermoid Tumour growing within the Spinal Canal in which an attempt was made to remove the growth. The patient was a man, aged 26 years, who had been suffering from a very chronic form of Hodgkin's disease. He was first seen by Dr. Hale White and Mr. Fripp with Mr. A. F. Wilson at the end of March, 1899. In the middle of January, 1899, the patient began to complain of loss of power in the legs. By the end of March there was complete paraplegia without muscular wasting. The breathing was almost entirely diaphragmatic, the right hand was much stronger than the left, and all forms of sensation were lost up to the level of the nipples; there was no hyperæsthetic zone; there was severe pain shooting down both intercosto-humeral nerves and round the chest along the second intercostal nerves, the lower limbs were rigid, the knee-jerks and plantar reflexes were exaggerated, and there was great superficial tenderness over the second, third, and fourth dorsal spine. There was incontinence of urine with cystitis and obstinate constipation and great distension of the abdomen. The pulse was 120 and the temperature generally was about 101° F. There were no signs pointing to caries and aneurysm. The diagnosis was that there was some collection of fluid or a new growth within the spinal canal irritating the second dorsal nerve and compressing the cord below it. There was no evidence that this was syphilitic or that it was malignant. An exploratory laminectomy was performed, the second, third, and fourth dorsal arches being removed. A grey tumour situated upon the outer surface of the dura mater was exposed, which reached out of sight both above and below. Pieces of the growth were snipped away. The patient quickly rallied from the operation and the wound healed by first intention. The tumour proved on microscopical examination to be a dermoid cyst. The patient was seen again by Dr. Hale White and Mr. Fripp eight weeks later. The pulse and the temperature were normal. There was slight and occasional voluntary movement in the legs. The exaggeration of the knee-jerks was less and the rigidity had disappeared. There was almost complete return of all forms of sensation down to the groins, but no improvement in the lower extremities. The radiating pains had disappeared. The chest moved better. The cystitis and incontinence had disappeared and the constipation and abdominal distension were less. There was a large bedsore on the sacrum and another on the buttock. Considerable as had been the improvement it appeared to Dr. Hale White and Mr. Fripp that as much of the tumour had been left behind, and as the pressure symptoms were far from completely relieved, the only chance of benefiting the patient lay in a further attempt at complete removal. A second operation was performed. A large mass of the tumour was found to have grown backwards through the gap in the spinal canal made at the first operation. The first, fifth, and sixth dorsal laminæ were removed, but still no limit could be seen to the growth. The patient rallied well but sank again eight hours after the operation.—The PRESIDENT remarked that the case was of interest as bearing on the question how far interference was justifiable in cases of this kind.—In reply to the President, Dr. HALE WHITE said that the case was unique as regarded the nature, though not as regarded the position, of the tumour. Cases of dermoid cysts had been recorded in the middle line between the skin and the spines, but not within the spinal canal.

Mr. ROBERT JONES (Liverpool) and Mr. A. H. TUBBY communicated a paper on the Reduction of the Deformity of Spinal Caries, based on 99 cases of angular deformity from Pott's disease treated by Manual Rectification, including the results of the 25 cases which had been brought before the Clinical Society of London in November, 1897. In this first series of 25 cases the following results had been obtained: five patients had died, four had discontinued treatment, 15 were alive, well, and able to walk, and one was still recumbent and sickly. As to the causes of death, one died four days after the operation, but post mortem no abnormality was found beyond some enlarged mesenteric glands; one died from tabes mesenterica 15 months after the operation; one died from pulmonary tuberculosis 16 months after the last stretching, one from intestinal obstruction twelve months after, and one from diphtheria. Billroth, Menzel, Jaffé, and Mohr estimated the death-rate from Pott's disease to be 25 per cent., the death-rate of the series observed by Mr. Jones and Mr. Tubby being only 12 per cent. Four of the cases developed abscesses, of which two healed and one patient became paraplegic eight months after the operation, but had since recovered. Five of the 25 patients recovered from paraplegia as the immediate result of the operation, recurrence taking place in one case. In five cases the curvature was practically obliterated and remained so with a spinal support, and the curve was much improved in ten of the cases. In a parallel series of non-rectified cases three patients had died from tubercle, four

had developed abscesses (two of them healing), four had become paraplegic with two recoveries, and in seven the deformity was very marked. Mr. Jones and Mr. Tubby then brought forward a series of 74 cases subsequently operated on. Of these seven patients had died, 29 were walking, 28 were recumbent, and 10 had discontinued treatment. As to the causes of death, one patient died from empyema four weeks after operation; one died from general tuberculosis thirteen days after operation, and another two years after; one died from pulmonary phthisis eighteen months later and one from pneumonia two years after; one died from exhaustion; and one died six months after reduction for paraplegia, without relief, from diarrhœa. Three patients were operated upon while abscess was present and 13 developed abscesses subsequently, of which nine had healed. Seven patients had recovered from paraplegia, or the condition had been relieved and had remained so. In 16 the curvature had either not improved or had become worse, but not necessarily as the result of the operation. Mr. Jones and Mr. Tubby deprecated the employment of much force, their plan having been to proceed by stages with an interval of a month between each attempt. They laid it down that the after-treatment should not be less than three years. Their conclusions were as follows: (1) that danger to life was not great; (2) that far from inducing paraplegia the operation was actually a curative measure; (3) that abscess formation was, if anything, less frequent; (4) that the risk of disseminating tubercle was a negligible quantity; and (5) that there was no risk of a flail-like spine. The contra-indications were: (1) cervical and high dorsal curves, unless associated with paralysis; (2) ankylosed spines; (3) large and angular deformities; (4) evidences of tubercle elsewhere; (5) in children under two years of age and in adults over 22 years; and (6) the presence of abscess unless there were paraplegia. They advised the operation only when the spine was yielding and in comparatively strong children free from abscess and tubercle. They pointed out that the operation was not to obliterate all the prominence, but to give as erect a position as possible. Lastly, they urged that cases for operation must be selected with great care, that personal attention to the patients must be unremitting, and that fresh air was an all-important factor in the after-treatment. They exhibited a selection of the first series of 25 cases showing the actual results.—The PRESIDENT observed that whatever they might think of the ultimate results of the treatment the facts brought before them must materially alter many of their present views. He asked whether albuminuria due to myeloid disease had disappeared when the surgical deformity was remedied.—Mr. J. JACKSON CLARKE said that he had followed the revival of forcible correction of deformity in spinal disease with great interest. He believed that he was the first surgeon to perform the operation in London. In order to understand the results obtained in the cases before the society it was necessary to consider the methods previously employed. Mr. Tubby had put it on record that up to 1896 he had chiefly used corsets of plaster or of felt. Mr. Clarke had found the results of such appliances to be very disappointing. Mr. Jones had chiefly employed Thomas's cuirass which was also used in the after-treatment of many of the cases before the meeting. This cuirass, which exerted a leverage action on the spine, had certain defects, though it was, in Mr. Clarke's opinion, better than any other corset. It did not lend itself to periodical re-adjustment and thus was no help to gradual correction of deformity; it did not provide for alterations required by the growth of the patient, and again it did not readily lend itself to the addition of a head-piece needed in high dorsal and cervical cases. By the use of an antero-superior support which did not possess these disadvantages Mr. Clarke had obtained results which he believed compared very favourably with those seen in the cases now shown by the authors of the paper. Thus in some cases of lumbar disease the deformity had been obliterated; in other cases it had been considerably diminished. These results had been obtained sometimes after a period of rest in bed or on the couch, but more often with ambulance treatment throughout. The educational aspects of spinal cases had to be considered and a method of treatment that allowed a patient to be taught at home or to go to school was, other things being equal, to be preferred to one that demanded two or three years of fixation upon an apparatus in the dorsal recumbent position. The death-rate of 25 per cent. quoted from Billroth as being observed in cases treated without forcible extension was far too high. Even that of 12 per cent. observed by Mr. Jones and Mr. Tubby in the cases which they had operated on was distinctly high, being above that observed by Mr. Clarke in cases treated in London. It was to be noted that in more than one of the cases in the paper no real diminution of deformity had been obtained, and as regarded the future of the patients there was no proof that as soon as the apparatus was left off deformity would not return as the patient grew up owing to damage to the epiphyseal discs. The many contra-indications pointed out which would have to be observed in deciding to perform forcible rectification approximated closely to Mr. Clarke's own views, which were to the effect that this operation was only called for in exceptional cases. The chief indication was a paraplegia that had resisted a patient trial of gentler means.—Mr. RICHARD BARWELL questioned whether the good done was as great as they were asked to believe, and he doubted whether there had been actual straightening in many of the cases of the angular curve. On the whole he did not think that the results were better than would be obtained in three years by other methods of treatment. He observed that in the case of a child, who was said to have had paraplegia, the child was under two years of age at the time and possibly was unable to walk; moreover the mother said that the child had been able to move his legs. He pointed out that by lifting the patient by the arms and watching the angle it was easy to see whether the ulcer of the bones had healed. On the whole he thought the results were somewhat disappointing.—Mr. BERNARD ROTH said that since seeing these cases he thought there was more in the treatment than he had imagined, but he would like to see the cases a year after all instruments had been left off.—Dr. E. PERCY PATON asked how long the patients had remained in hospital under treatment and he pointed out that prolonged recumbency in the homes of the poor could not be desirable.—Mr. HOWARD MARSH commended the authors of the paper for the vast amount of patience and labour which they had devoted to the subject. They must, however, all feel that the subject had not been thoroughly threshed out though many interesting points had been raised, and he thought the question was one that might advantageously be referred to a committee for investigation and report. He was tempted to raise the question whether the conclusions arrived at by Mr. Jones and Mr. Tubby were justified by the facts which they had brought forward. He challenged the estimate of 25 per cent. as the probable death-rate from Pott's disease. He himself would put it at 5 or 6 per cent. He pointed out that paraplegia was equally recovered from under other methods of treatment, and he concurred in the view that the correction of the deformity was often more apparent than real.—Mr. BERNARD ROTH seconded the reference to a committee, and some discussion ensued as to the scope of the reference and the way in which the inquiry could be carried out. Ultimately the proposal to nominate a committee was agreed to, the precise terms of the reference to be submitted to the council.—Mr. TUBBY, in reply, said that he thought it would be conceded that they had done their best to fulfil their pledge of two years ago to follow up those cases. He pointed out that they did not insist so much upon the value of the operation in remedying the curve. With reference to albuminuria he said that it disappeared when the abscess ceased discharging and no patient had died from lardaceous disease. He did not believe that equally good results could be obtained with instruments. In reply to Mr. BARWELL he said that the child stated to have had paraplegia had the lower limbs rigid with exaggerated reflexes and could not walk. He added that the labour, difficulty, and anxiety entailed by the endeavour to afford the society such a demonstration of results as that before them were very great, and he did not think that they could in any way manage to approve of a committee being sent about the country to inspect their cases, but the committee would, of course, be welcome to examine the records.

CHELSEA CLINICAL SOCIETY.

The Treatment of Rheumatism.

THE adjourned meeting of this society from March 13 h was held in the Parish Hall, Pavilion-road, Chelsea, on March 20th, Mr. FOSTER PALMER being in the chair.

The CHAIRMAN said that at the last meeting the Treatment of Rheumatism which they principally heard about, and

which was to a large extent endorsed by those present, was the salicylate treatment. The causation which found most favour, although not yet actually proved, was the bacterial theory of origin. Until they knew for certain whether rheumatism was a bacterial disease or not their treatment must be more or less empirical and unscientific. He then called upon Dr. Pye-Smith to continue the discussion.

Dr. PYE-SMITH said the first thing they had to be sure about was that they were talking about the same thing. He began by saying what he understood when he spoke of rheumatism. He meant rheumatic fever and nothing else. He held that there was no such thing as chronic rheumatism. Acute and sub-acute rheumatism were one and the same thing. No doubt there were different forms that it assumed; in a child rheumatism took a different form to that seen in the adult, but it was all the same affection. He did not admit chronic rheumatism as having anything to do with rheumatic fever, nor had osteo-arthritis as it was called, or rheumatic gout, or arthritis deformans, or gonorrhœal synovitis, or gout, or pyæmia anything to do with rheumatism. That he considered was what they meant when they talked of the treatment and prevention of rheumatism. At present they must define rheumatism by its clinical features which were clear and distinct; the multiple affection of the joints, the transient synovitis, the fever, the comparatively short course, the tendency to recurrence, and, above all, the liability of the heart to be affected, formed the clinical picture which had been recognised since Sydenham. He thought they ought to keep strictly to that for their definition. Whether rheumatism was due to a chemical poison or not had not been discovered. It was certainly not due to lactic acid or to uric acid; he ventured to say dogmatically that there was no evidence to support these hypotheses. Their chairman had spoken of the view of the day that rheumatism would turn out to be due to a bacterium, but till it did turn out to be so surely the less they said about it the better. There was no benefit in anticipating in this manner. Passing to the treatment of the disease he said they might be well satisfied with the great progress made in the last 30 years. Some of them remembered what rheumatism was like in the days before the salicylic treatment. It had been robbed of all its features of pain and distress—the very appearance of the patient was totally different. Formerly the very distress on the patient's face showed at once what he was suffering from. Those who had seen rheumatic fever treated by bleeding in Paris *coup sur coup* till the patient was blanched knew what mischief could be done in that way, and of all the treatments for rheumatic fever that he had seen bleeding was decidedly the worst. Rheumatic fever treated with lemon juice in large doses was ill-treated and with alkalies it was inefficiently treated. The treatment with blisters was more intelligent and he remembered asking a number of patients in regard to the discomfort caused and they were equally divided as to the pain. The revolution which came into their practice when salicylic treatment was introduced had made rheumatism a different disease. What were the points they were still unsatisfied about? First, it had not diminished the mortality. He collected 400 cases from the same hospital before the salicin treatment with 15 deaths. The number was larger than was really the case, for one died from an epileptic fit, one from an excessive dose of morphia, another was a case of strangulated hernia, and of the deaths due to rheumatism they were from rheumatic complications, hyperpyrexia, pneumonia with pleurisy, heart disease from previous rheumatism, so that the actual deaths in rheumatic fever were very small. The apothecary at the hospital was in the habit of saying to them, "Since you young gentlemen have begun to treat rheumatism the patients have begun to die." Dr. Donald Hood believed there was something in that, but no one could doubt the efficacy of the salicylate treatment in relieving pain. Some of them must have seen cases in which the salicylate treatment did not act favourably; the first patient he treated suffered from vomiting, diarrhœa, and hæmorrhage and that had been noted not infrequently. 12 cases had been collected in which hæmorrhage occurred not only from the kidneys but in the retina and he thought pretty clearly from the use of salicylic acid. They were familiar with the unpleasant consequences of the drug, the buzzing in the ears, the headache, and so on, but perhaps the most important thing in many ways was its effect on the heart. In cases where the pulse was good, with salicylates the pulse may become irregular and slow. Though the treatment was not an unmixed benefit still those effects might be prevented by giving ammonia or brandy, and if they bore in mind the possibilities of the depressing effect on the heart—he referred to the undiseased heart—they could prevent it. Did the salicylate treatment diminish the liability to relapses? One of the most painful experiences was to see a patient have a relapse after passing through the first attack without the heart being affected and have the heart suffer in the second attack. They would be glad if some means could be found to prevent that happening. He did not think that the tendency to relapse had been much altered by the salicylic treatment nor could they say that recurrences had been prevented, for rheumatism was one of the diseases that could occur again. From the general impression of the cases they saw they could say that on the whole the more severe a case was the more often the heart was affected. In children a slight attack with scarcely any synovitis might very seriously affect the heart; in adults the mild attacks were less often accompanied with cardiac disease; and in severe cases they expected to find a murmur and they were seldom disappointed. The fact that salicylates shortened the period and the severity of the disease did something to prevent cardiac complication. In shortening or diminishing the possibility of relapse salicylate kept on in small doses had a certain effect, but a more important thing was to keep the patient in bed as long as they could, if possible for six weeks. The old treatment was patience and six weeks in bed, and now, though the patient was not in misery and suffered no discomfort, it would be well to compel the virgin heart-cases to lie in bed for six weeks. Another point was not to allow them to take solid food; the longer they could be kept on milk and mild unstimulating food the better. He would say if he were a young man 25 years of age with his first attack of rheumatism and no murmur that he should like to be put to bed, with milk for diet, water to quench his thirst, and large doses of salicylate of soda at frequent intervals till the fever had gone and the pain had disappeared, the dose then to be diminished but the drug not to be discontinued, and if there was an irregular or failing pulse he would have brandy as the most appropriate remedy. If any doubtful sign about the heart occurred he thought it was very questionable whether they had any immediate means of acting upon it or preventing it, but if Dr. Caton was in his neighbourhood he would certainly invite him to try multiple blisters. The only possible harm would be to perhaps prevent ease of mind and temper, but he was prepared on Dr. Caton's authority to believe that there would be some considerable advantage from it.

Dr. R. CATON (Liverpool) said he would like to confine his remarks to the second part of the special subjects for debate—namely, the special prophylaxis against rheumatic valvulitis. He wanted to mention two or three experiments which he had been trying for the last 19 years with regard to this particular subject which was one of the most important points in regard to rheumatism. If they could get rid of the heart complications they would have comparatively little anxiety about their patients. His ordinary habit of treating patients was to keep them in bed and wrap them in flannel from the neck to the feet in every case to prevent the possibility of chill. He ordered a light diet, absolutely excluding all nitrogenous foods except milk. He gave salicylates, which he called the most glorious boon to the rheumatic, and he also prescribed a certain amount of cholagogue. The patient lost his pain and fever within 12 or 24 hours and if the pain lingered in any joint he personally always if the pain was obstinate applied a few blisters to the joint which invariably relieved the pain, swelling, and stiffness at small discomfort to the patient. He had tried it on himself and on hundreds of patients and provided the blisters were made small enough the pain and discomfort were almost unnoted. He could say that from his own personal experience and from that of hundreds of people. There was a feeling in the profession that blisters necessarily caused pain and of course the acreage of blisters used by our forefathers was such as to cause pain and discomfort. When he had treated a patient in the way he considered the next question was, Would his heart remain free from trouble or would they have the most dreaded complications to deal with? He had been watching cases of rheumatic fever daily for 25 years and had seen them occasionally in private practice. When he began medicine, believing in what he had been taught, he treated the rheumatism and trusted that the cardiac complication would not occur, and if it came he

hoped that it would disappear. He was much interested in these cases and took the trouble to watch the patients who had recovered from their illness and traced them out, but he was sorry to say that the result was a painful and disappointing one. He found that the bruit which had developed itself in hospital and which they had recovered from before leaving terminated in a life-long cardiac disablement. He felt this so keenly that 19 years ago he set to work to read up the subject to see if any hints could be found to help in trying to get a method to prevent this involvement of the heart. Some recommended huge blisters, icebags, leeches, poultices, large doses of mercury, and in his despair he tried a variety of these for four years with unsatisfactory results. At length he hit upon the following method: first of all to keep the patient who had developed a bruit, not a hæmic or temporary or dilatation bruit, but a true valvulitis bruit, in the recumbent position for a great length of time, preventing him raising his head even, guarding him from all possible excitement, with the object, of course, of slowing as far as practicable the action of the heart and keeping down the blood-pressure and preventing the strong blood waves of high tension from injuring the swollen and softened valve cusps. He tried to do that, though it was difficult to get the patient to submit to it because he thought he was cured of his rheumatism and considered himself well. He only began to learn after some years of practising this method how enormously important the prolonged rest was. Then there was a second point: he was anxious to discover some method of influencing the heart itself. They knew there were certain nerves, certain cutaneous nerves, in special relation to the heart, the first, second, third, and fourth dorsal intercostal nerves. Those who had watched angina or cardiac inflammations knew how frequently these nerves were the exponents of the mischief that was going on. The heart was related to these nerves and he hoped it might be possible to send a stimulus through these afferent nerves. Experiments showed it was possible to influence the blood-vessels and it seemed likely that they might also use a stimulus applied to these nerves to increase and augment the reparative function of the vaso-motor and trophic nerves in the heart. He tried the experiment of using small blisters along these nerves, not over the præcordium—that had no relation to the heart, they might as well try blistering the leg as there—but it was along these four nerves which were specially related to the heart that for 15 years he had tried these blisters, of the size of a florin or less, one at a time, following each by a small poultice to keep up a gentle stimulation of these nerves. He had not had any complaint from women or children and he had never heard any expression of suffering. The third method he tried, beyond the rest and blistering, was the administration of sodium iodide or potassium iodide about from eight to ten grains three times daily. It was given in the hope that it might aid in the absorption of inflammatory products in the endocardium which filter their way into the cusps of the valve. It was hoped that while these inflammatory effusions were still unorganised that it might be possible to aid their removal. Once organisation had taken place the removal was in all probability hopeless. When once alteration and puckering had taken place all chance of the renovation of the valve was hopeless. At the very first if the affection could be attacked in the early stage while the inflammatory condition was not organised its absorption and removal might be secured. They would see that these were all mere theoretical ideas and they would ask what proof was there. He admitted they were theoretical, but they had a certain amount of reasonableness: certainly the first had, and perhaps the other two had. The evidence he could give was the evidence of results. He had had over 500 cases of acute rheumatism in the last 15 years and in a great many they had no cardiac complication—considerably under 20 per cent. The great difficulty in experimenting upon endocarditis was that the great majority of the cases in the hospital had the disease established on admission, and it was hard to say whether the case was sufficiently recent to be benefited or not. Out of the cases he mentioned 54 had the various phenomena of cardiac mischief on admission, but there seemed a chance that the disease was recent though he was not sure in all. Out of the 54 cases 34 went out with quite normal hearts without dyspnœa of any description. They were all urged to rest and avoid exertion for several months. He had watched these cases as far as he could. Some were sailors, some were servants, some therefore went far away, but many he had followed for months and for years, and in the great majority the heart had remained perfectly sound. The second class, however, were those who came in with perfectly normal hearts and in whom the evidences of valvulitis began in the hospital. He had treated 30 cases and 27 went out without a trace of heart affection. A great many of these he had watched and continued to watch. The longest period for which he had watched a cured case was 15 years, and the heart was as sound 15 months ago as could be. He could not expect them to accept all his views, but they were recognised by his own students and a few practitioners who had also had the same results. He did not want to hold it up as the best and only method, but they should try to find out some method of diminishing the frequency of cardiac complication because it was such a serious and terrible thing to have for a whole life a crippled heart, and unfortunately it was very common. There was hardly a week that he did not have to admit some poor soul with a history of rheumatic fever three years ago and inability to breathe properly since. They should do everything they could by experiment or otherwise to find some method to diminish this great scourge which furnished one of the greatest opprobriums to the medicine of the present day.

Dr. BURNEY YEO said that all he had to offer were a few deductions from his own observations and experience. He was entirely in agreement with those speakers who regarded acute rheumatism as an infective fever probably of bacterial origin, and he did not quite share Dr. Pye-Smith's objection to a working hypothesis or to what Professor Tyndall called the scientific uses of the imagination. Great truths in science were often reached by hypothetical speculation. Reasoning from analogy they might be justified in thinking that acute rheumatism was due to bacterial influence. He was also entirely in accord with those who had advocated the treatment of acute rheumatism by the use of the salicyl compounds. No one, he thought, could watch acute rheumatism in hospitals without being convinced that there was a profound change for the better through the use of the salicyl compounds. He was able to remember to have carried out a consistent treatment of rheumatism before the introduction of the salicyl compounds, and he did not share either Dr. Sansom's or Dr. Pye-Smith's view that that treatment was altogether useless and inefficient. That treatment as he carried it out was something of this kind: painful joints were enveloped in a weak alkaline and opiate lotion. If one saw the case at the very beginning one gave some full doses of opium over night for a few nights, 15 grains of Dover's powder till the joint pains had been relieved, followed next morning by a small saline draught to help elimination of the opium. During the day bicarbonate was given every four hours. If the temperature reached more than 102° or 103° F. two grains of quinine were added to each dose of the bicarbonate of potassium. If the joint pains and swellings lingered it was very common to apply a blister about two inches above the joint, and he quite failed to share either Dr. Sansom's or Dr. Pye-Smith's objection in regard to the discomfort. He quite agreed with what Dr. Caton had said as to the slight inconvenience experienced by patients, supposing the blistering to have been skilfully and carefully done. He knew it was stated in books, and he had heard it said, that blistering would often produce irritation of the kidneys, but after years of experience he had never seen a single instance. He could quite believe that in the days gone by, when blistering was done on a large scale and with not much attention to the dressing, discomfort and irritation of the kidney arose, but he had never seen such a thing. The application of small blisters from place to place was important and the dressing was not unimportant. The patient's discomfort often arose from the looseness with which the dressing was applied. The blister should be slit, the dressing ought not to be allowed to get loose, but ought to be fixed firmly by sticking-plaster, and if that was done the patient would not suffer any discomfort from blistering. Although one was accustomed to notice and to be struck with the beneficial influence of the treatment by salicyl compounds in acute rheumatism he could not say that he was fond of salicylates, for he had seen so much of that cardiac depression to which Dr. Pye-Smith had called attention that he was always glad to reduce the dose and he was still more pleased when he could do without the salicylates altogether. He was surprised to hear that

Dr. Lees said that he thought the depression was due rather to the disease than to the remedy. He was amazed to think that anyone could doubt that these salicyl compounds were not depressing to the heart. He had pointed out often at the bedside that a patient after taking salicylate of soda for 24 hours would have the pulse depressed to 60 while the temperature would only be reduced to 101°. There were numerous cases of chronic disease in which patients were put under the influence of salicylate and suffered considerable depression. It was common to give this drug in cases of long duration and he had seen a woman who had been thus treated for three months at Wiesbaden for gouty affection of the eyelids with neuralgia. She had salicylate of sodium which had relieved her pain but had produced a most remarkable condition of depression. On the administration of other drugs for the relief of the neuralgia her depression cleared off and she said that she felt a different woman, no longer suffering from a depression which made her life a burden. In the influenza of the rheumatic type salicyl preparations relieved the pain, but the cardiac depression was a very serious matter. He was accustomed to give salicylate of soda or, perhaps better, salicin, which Dr. Maclagan preferred, for a few days; and when the patient was in a happier condition he was glad to leave off the salicin and take to quinine or some other drug which gave him no anxiety as to cardiac depression. At their last meeting Dr. Donald Hood, who rather advocated other treatment than by salicylates, called to his aid the testimony of Dr. Osler. Dr. Hood mentioned to them Dr. Osler's premisses but he did not tell them Dr. Osler's conclusions. He would read them Dr. Osler's premisses and then his conclusions:—

> Medicines have little or no control over the duration or course of the disease which, like other self-limited affections, practically takes its own time to disappear. Salicyl compounds, which we regarded so long as specific in the disease, are now known to act chiefly by relieving pain. R. P. Howard's elaborate analysis shows that they do not influence the duration of the disease. Nor do they prevent the occurrence of cardiac complications, while under their use relapses are considerably more frequent than in any other method of treatment.

Dr. Osler's conclusions were:—

> In acute cases with severe pain the salicyl compounds give prompt relief and rarely disappoint us in their action. Sodium salicylate in 15-grain doses for eight or ten days may be given. The bicarbonate of potassium in 20-grain doses may be used with it. I have for the past five or six years used the oil of wintergreen recommended by Kinnicutt and have found it quite as efficacious. 20 minims may be given every two hours in milk.

Dr. Osler further says: "Opinion is almost unanimous that under the alkaline treatment cardiac complications are less common. The combination of the salicylates with the alkali is probably the most satisfactory." Those, then, were Dr. Osler's conclusions and if they were compared with the premisses one was almost tempted to say that the voice was Jacob's voice but the hands were the hands of Esau. For his own part, he agreed with Dr. Osler that a combination of the salicyl treatment with the alkali treatment was probably the best. There was a certain amount of opinion in favour of the alkaline treatment diminishing the risk of cardiac complications and it was difficult to discover whether this was the case or not, but so long as there was a large body of opinion in favour of that view, and while they knew that the administration of alkalies altered the morbid condition of the urine, he thought it rational to combine a mild alkaline treatment with the salicyl treatment. There was another point, and that was to give patients the subjects of acute rheumatism large quantities of water to drink. In no disease was there such a loss of water as in rheumatism. It was important to supply that loss, as also in all fevers, especially as they were treated in hospitals, for he had been surprised to find how little attention to the supply of water there was in those institutions; he had often given a glass of cold water to fever patients. Knowing that in cases of rheumatic fever they had profuse sweating and high-coloured scanty urine it was an important thing to dilute the concentrated blood which had become so from great loss of water. With regard to the incidence of endocarditis in acute rheumatism the remarkable fact that the right side of the heart was almost immune from these attacks of endocarditis ought to be dwelt upon. The usual explanation that was put forward, that the left side was functionally more active than the right, was wholly inadequate. It was more probable that the endocardium on the right side of the heart was protected in some way by the condition of the blood; whether the carbonic acid in the blood interfered with the action of the toxin or whether it rendered the endocardium less susceptible he did not know. Perhaps Dr. Ewart in some of his therapeutic observations might try whether the inhalation of carbonic acid would diminish the tendency to endocarditis.

Dr. ISAMBARD OWEN said that his own observations of acute rheumatism and of its treatment had always led him to believe in the truth of the hypothesis that Dr. Maclagan had put forward for a score of years, that rheumatic fever was a specific disease produced by a specific germ and that the action of the salicyl compounds was specific. The materies morbi was actually destroyed by this substance. It had been objected to this view of the action of the salicyl compounds that they did not succeed in stopping the disease in all cases. That he confessed. His own impression was that salicyl compounds would stop rheumatic fever in every case if the patient could stand sufficient of the drug to saturate the fluids of the body up to the necessary point, and that point might differ according to the case and according to the patient, and the patient's susceptibility in regard to the nervous system with regard to salicyl differed remarkably. A certain proportion of cases arose in which the toxic effects on the nervous system were reached before the necessary saturation of the fluids was obtained, and one had to stop short before one had succeeded in efficiently treating the rheumatic fever. He was surprised to read in Dr. Osler's work his statement with regard to the effect of remedies in acute rheumatism, but as Dr. Osler put the dose of salicylate of sodium at 15 grains and did not specify the periods at which the doses were to be repeated—he supposed he meant every six hours—his surprise vanished. For in most cases of rheumatic fever it was certainly necessary to give the drug in larger doses or at more frequent intervals. He himself had never found reason to apprehend the depressing effects of the drug. He did not propose to enter into detail into the action of the drug with respect to the rate of the pulse or into any details of its action, but he would merely, taking the broad ground, state that personally he had administered salicylate of sodium in many hundreds of cases, and very freely indeed, and very seldom had he had to suspend the administration of the drug owing to any depressant effects upon the patient, and where depressing effects had resulted they had presented themselves to him as effects rather upon the central nervous system than upon the heart, and, speaking broadly, he had very seldom seen any reason to fear salicylate of sodium in the necessary doses. It had further been objected to these views of the action of the salicyl compounds that they did not prevent or tend to the cure of what used to be called complications, the effects upon the endo- and peri-cardium. He would say personally that they had prevented a great deal of pericarditis by cutting the attacks of rheumatic fever short before pericarditis had developed. He did not think their use materially prevented the development of endocarditis; his experience tended to show that the effects of the disease upon the endocardium were among the earliest effects produced in all given cases; he was almost disposed to believe that the endocardium was one of the earliest parts affected in rheumatic fever. It was true that the murmur characteristic of it might not be heard at the outset, but then the affection of the heart valves required a little time to develop to that point at which it was capable of producing a change in the heart sounds, and rheumatic endocarditis produced at the outset no symptoms by which its presence might be recognised. In his own hospital experience the proportion observed of murmurs which developed after the patient's admission was exceedingly small; he thought about one in 30. That was the result of the statistics which he had gathered at St. George's Hospital many years ago. It was objected that over endocarditis and pericarditis the salicylate compounds exercised no curative effect. The answer was given practically by Dr. Garrod that day last week when he pointed out that it was quite the habit of diseases produced by specific germs that the germs should give rise to several toxins which enter into the circulation, and that although a remedy might destroy the parent germ and might destroy or counteract the effect of some of the toxins other toxins might remain over which the remedy had no power. That was seen in the treatment of diphtheria by anti-diphtheritic toxin. This was corroborated by rheumatic fever in a consideration which was often overlooked, and that was that endo- and peri-cardial lesions differed from the articular lesions not only in situation but in kind.

That difference was masked under the common name of inflammation which was generally applied, but to his mind the name inflammation was quite inaccurately applied to the articular lesions of acute rheumatism. Redness, heat, and swelling were considered inflammation, but they understood it as a process in which the leucocytes—he believed the all-essential part—proliferated in the inter-vascular spaces and finally caused thickening or destruction of the tissues. But there was nothing of that kind in rheumatic fever; the exudation which caused the swelling of the joint was mainly synovial, and if not altogether synovial was more or less serous in addition. The fluid effused about and inside the joint in rheumatic fever contained scarcely any fibrinous exudation, and the exudation of the leucocytes was no more than would be expected in an effusion produced by any other kind of hyperæmia. Although the affection might have lasted in a joint in an acute form for a week, for a fortnight, or for three weeks, yet when the pain had gone the patient moved his joints freely, or when it was cut short altogether by the action of salicyl compounds, in 48 hours from the disappearance of pain in the joint the patient could move his joint freely and recovered without permanent trouble in the joint. It was a hyperæmia but not a true inflammation, as was pointed out by Todd somewhere about 50 years ago. There were exceptional cases in which the hyperæmia set up a process of inflammation, a small proportion of cases in which a certain amount of inflammation was set up in the joint and the joint was found becoming œdematous externally. In these cases some time elapsed before the joint could be moved freely. There was a still rarer class of case in which tuberculous inflammation had existed in the joint before and which ultimately merged into a tuberculous joint. But in the majority of cases in acute rheumatism the joint recovered without thickening or destruction of the tissue. The scope of the discussion as laid down included the prophylaxis of acute rheumatism and into that subject he endeavoured to make some investigation some years ago by making inquiries into the status and habits of a large number of patients. This was at the time when he was medical registrar at St. George's Hospital. In spite of his labour he was sorry to say he gained very little information. Rheumatic fever patients he found on the whole were less alcoholic than on the average, but that was probably accounted for by the comparatively youthful age of the patients. The common belief that beer was obnoxious to rheumatism obtained a certain amount of support; the proportion of beer- to spirit-drinkers was considerably in excess of the ordinary ratio. There was a belief at that time that suppression of perspiration had much to do with the genesis of acute rheumatism and that led him into inquiring as to the habitual perspiration of these patients, whether it was in excess or in defect, or about the same. He did, however, find that in the proportion of 58 to 43 per cent. patients with rheumatic fever appeared to show one or other peculiarity; further than that his inquiries led to no result. The question of climate and situation was no doubt one of some importance and there was a general belief that rheumatic fever was a malady especially attached to low-lying damp districts. That did not seem to be borne out by statistical evidence. Some 15 years ago he made a preliminary inquiry on the part of the International Investigation Committee into the general prevalence of rheumatic fever in this country. It appeared that there was no part of this country which could be said to be free from rheumatic fever—he meant the whole of the United Kingdom—and there were very few places in which it was not said to be a common malady. The British Medical Association Investigation Committee had made inquiries and one point was the character of the locality in which the patient was living at the time he was attacked, and the results were quite contradictory to the ordinarily received opinions on the subject, for the great majority of patients affected were said to have been attacked while living either in high, or dry, or exposed, or high and dry, or high, dry, and exposed, localities. The largest group was the group from the high, dry, and exposed localities. That agreed with a certain amount of personal experience that they had had at St. George's Hospital. They had a large convalescent hospital at Wimbledon which was on the top or a little down the slope of a hill on a gravel soil, protected from the north and east, and facing south and south-west, but the liability to rheumatic fever in this hospital was so great that for many years they had never sent a convalescent rheumatic patient there. Out of the rheumatic fever patients sent when he was there he did not think 10 per cent. escaped from a return of the malady. This bore out the results of the Collective Investigation Committee. He would not follow the previous speakers into the treatment of the onset of cardiac complications, but he would point out one thing in regard to the commencement of pericarditis. He was surprised to hear in the various treatments employed at the onset no mention of the very old-fashioned remedy which he was accustomed to employ and with considerable benefit: he meant the application of eight or a dozen leeches to the region of the heart, and this old-fashioned remedy, now almost dropped into disuse, had appeared to him in some cases if not absolutely to check the pericarditis at any rate to relieve the patient of the most serious symptoms and considerably to modify the intensity of the process.

The CHAIRMAN asked Dr. Caton what particular nerves they were to which he applied the blisters. With regard to Dr. Pye-Smith's views as to the bacterial origin of rheumatism, unless some working hypothesis was brought forward they would never arrive at any result. He ventured to say that the Listerian treatment would not have been discovered had not Lord Lister formulated in his own mind the possibility of the treatment which he afterwards carried out so successfully.

Dr. C. C. GIBBES said that there were certain cases of rheumatism in which the salicylate treatment failed on account of the toxic effects produced before the patient was saturated with one of the salicyl compounds. He thought sufficient importance had not been given to the nature of the salicylate compound prescribed. Looking at the British Pharmacopœia as it at present stood if they prescribed salicylate of soda the chemist simply mixed up the cheapest drug on the market. There were four different kinds of salicylate—the natural, the artificial, the pure, and the purest form. The artificial or the British Pharmacopœia form was infinitely the cheapest of the whole lot, and he believed it was used in a large number of hospitals. He had given the salicylates in various forms and at various periods, and he thought it was of the greatest importance that the quality of the drug should be determined and also the way in which it was given. Taking the quality of the drug, Mr. Williams had investigated this matter about the time Professor Latham wrote about the natural salicylate of soda, and he found that the impurities which, according to Dr. Charteris, produced most of the toxic effects were chiefly the ortho- and meta-cresotic acids. Later experiments by Duncan and Flockhart proved that the impurities in the present artificial salicylate were para-cresotic acids. Clinically most were agreed that the toxic effects produced by the salicylates 20 years ago and now were different. About the way in which it was given, he had tried it in 20 grains every three hours and more quickly, and he found there was no comparison in the methods. If one wanted the full and the best effects of any salicylate compound he must give it with big doses to start with and repeat them for two or three days, according to the patient's idiosyncrasy. Personally he found that taking it himself there was no comparison between the artificial drug of the British Pharmacopœia and the natural drug. The toxic effects, he believed, were due to the para-cresotic acid. In the British Pharmacopœia form they could not get the patient in a large number of cases sufficiently under the influence of the salicylate because of the para-cresotic acid. In the natural form the patients could take larger doses; the shortness of breathing and delirium did not occur. That was his experience in rheumatism and he had taken the salicylate of soda himself. Why the Pharmacopœia Committee of the General Medical Council should have adopted and made official the cheapest form of the drug in the market and the most impure was really a puzzle, and it would be greatly to the benefit of rheumatic patients if it was laid down that the salicylate given must be either the purest form or else the natural one. Otherwise he did not believe that the salicylate in any form, such as the artificial, could be sufficiently pushed for the full benefit to be given to the patient. As to the time when it should be given if they gave it early they got infinitely better effects. Experience in the hospital and in private was different. In private practice they had a chance of giving the drug quickly and in the hospital they did not get the patient until the disease had got a certain hold. If statistics were to be drawn between alkali and salicylate treatment they must know the drug given and they must know the time when the treatment was started.

Dr. CATON said he was asked where he applied the blisters

to the first, second, third, and fourth dorsal nerves which Gaskell and Sherrington thought were closely associated with the heart. He applied the blisters to the region between the clavicle and the nipple; they would be effective behind but they would interfere with the patient's rest. Either to the right or to the left the blisters were applied, for the heart was as much associated with those nerves to the right as to the left.

Dr. WILLIAM KEEN asked if the urine were kept alkaline whether there was less chance of heart complications.

The discussion was closed by Sir RICHARD DOUGLAS POWELL, whose remarks are printed in full on page 920 of this issue of THE LANCET.

Dr. EWART said that the debate had not brought forward any real suggestion as to prophylaxis. They found a great diversity of opinion not only as to the nature of rheumatism but as to the mode of the action of the salicylates and as to their scope of action. They had still before them the whole inquiry as to the treatment of rheumatism and underlying that inquiry was the nature of rheumatism and its mode of manifestation. It had been said that rheumatism was an affection of the heart. How was it that 50 per cent. of the cases were to be found going about several years afterwards with perfectly normal hearts? It required the most perfect mechanism in its study and for that reason it seemed to him that that was an occasion on which they might bring the matter before the profession so as to promote a combined action for the purpose of the study of rheumatism, and these views had found expression in the motion which he had placed before them:—

That in the opinion of this society much useful knowledge might be obtained for the prevention of heart disease and other affections of rheumatic origin were fuller data as to the prevalence and distribution of acute rheumatism available for study.

Dr. Ewart suggested that this motion should be sent to the Local Government Board, but after some further discussion, in which Dr. GIBBES, Dr. VINRACE, and Dr. MACLAGAN joined, this was withdrawn.

Dr. A. B. BLACKER seconded Dr. Ewart's motion, which was carried.

EDINBURGH OBSTETRICAL SOCIETY.

The Chronology of Ante-natal Life.—Double Ovariotomy.—Chylous Ascites.—The Treatment of Eclampsia by Saline Infusion.—Pathological Amenorrhœa from other than Constitutional Causes.—Microscopical Demonstration of the Embryo of the Deer.

A MEETING of this society was held on March 14th, Dr. MILNE MURRAY, the President, being in the chair.

Dr. J. W. BALLANTYNE read a short communication on the Chronology of Ante-natal Life. He demonstrated a schedule of the divisions of ante-natal life which he had constructed on the "space-for-time" method which Mr. Jonathan Hutchinson had introduced into medical case-taking. In the scheme each space represented a week and the whole of the intra-uterine period of ante-natal life was extended, therefore, to 40 spaces. The leading subdivisions were marked off by thick and thin lines; in this way germinal life was divided off from embryonic, and embryonic from fœtal, and fœtal from neo-natal. At one side were numbers indicating the age of the pregnancy in weeks and at the other side were some of the great events, such as impregnation, organogenesis, growth, birth, adaptation, &c. By means of the schedule he claimed that a more clear conception could be formed of the phenomena of ante-natal life and of their relation to each other and to the progress of gestation. It might also be used as a case-taking scheme in obstetric practice in which any unusual occurrences in pregnancy might be noted down in their appropriate place and their possible bearing on the condition of the fœtus, as discovered at birth, made evident. Dr. Ballantyne also demonstrated a second scheme in which an attempt had been made to represent the projection of the various periods of ante-natal life into one another, for it could not, of course, be affirmed that the whole of the organogenesis of the body was completed in the embryonic period of ante-natal life, some of it was postponed till the fœtal period. This projection or overlapping was brought out graphically in the second schedule.

Dr. HALLIDAY CROOM read a note on an interesting case of Double Ovariotomy. The patient, aged 18 years, was first admitted to Dr. Croom's ward in the Royal Infirmary in July, 1897. She complained of a swelling of the abdomen which had been observed for 16 months. Before admission the tumour had been tapped three times. On examination extensive hydrothorax was discovered and the abdomen was enormously distended with fluid. The right pleural cavity was tapped and 144 ounces of serous fluid were removed and a few days later 280 ounces of similar fluid were removed from the abdomen. A large tumour was then detected in the abdominal cavity; it was irregular in shape, very hard, and it presented all the features of a malignant ovarian tumour; it was considered hopeless to attempt any radical operation. From July, 1897, to April, 1898, the patient remained in the ward and during that time the abdomen was aspirated every fortnight and the right pleural cavity was tapped on four occasions. In April, 1898, the conclusion was forced upon Dr. Croom that since the patient's general condition was no worse than on admission and the tumour had not changed in any way the condition might not after all be malignant and operation was accordingly undertaken on April 5th. Dr. Croom then removed the largest ovarian dermoid he had ever seen, but the operation was comparatively simple and the patient made an uninterrupted recovery. The right ovary was left intact as it seemed healthy. The patient went home to Shetland perfectly well on June 7th. She was readmitted to Ward 23 on Sept. 30th, 1899, when she complained of swelling of the abdomen which she had noticed for six weeks. Examination revealed a large, hard, semi-solid tumour growing upwards in the abdominal cavity, and this was diagnosed as an ovarian cystoma growing from the other ovary. Operation proved this tumour to be cystic, but owing to the numerous adhesions and to the fact that the tumour was intra-ligamentous the operation was very tedious and the patient became extremely collapsed. However, she speedily recovered and left the ward a month later perfectly well. The tumour was examined at the Laboratory of the Royal College of Physicians of Edinburgh, whence a report was sent that it was a cystic papilloma of the ovary. Dr. Croom referred to the difficulty of diagnosis of abdominal tumours and the importance of opening the abdomen in doubtful cases.

Dr. HALLIDAY CROOM also read a paper on Chylous Ascites with an illustrative case. He said that obstruction of the thoracic duct, especially if gradual, might give rise to no symptoms whatever, since anastomotic channels were established through which the lymph and chyle entered the circulation. However, in other cases congestion of the lymphatic system did give rise to definite signs and this was especially so when the lacteals of the abdominal cavity were within the area affected. A few cases had been recorded in which chylous fluid was found secondarily in the pleural cavity and only 63 cases of chylous ascites had been recorded. The notes of Dr. Croom's case showed that the patient, a female, aged 39 years, was admitted to Ward 28 in the Royal Infirmary on Sept. 29th, 1899, complaining of swelling of the abdomen and gradually advancing weakness and emaciation. These symptoms she had observed for three months, previously to which time she had been perfectly well. Examination of the abdomen revealed the presence of free fluid and an irregularly shaped and evidently malignant tumour. The abdominal cavity was aspirated and 380 ounces of fluid were removed. The fluid at first sight presented all the appearance of pus but on examination it was found that it was more mobile and had a sweetish milky odour and that after standing for 24 hours a slight creamy layer formed on the surface. Dr. T. H. Milroy reported that the fluid consisted partly of finely emulsified fat but more largely of a granular débris consisting mainly of fat. The patient did not improve but became more and more emaciated and a fortnight later 350 ounces of similar fluid were removed. She died five days later. A post-mortem examination was made by Dr. D. A. Welsh. A cancerous tumour was found at the pyloric end of the stomach and the mesentery and the glands were secondarily infiltrated. The small intestine showed an immense number of small cancer nodules surrounding the lacteals close to the mesenteric attachment. The thoracic duct and receptaculum chyli were carefully dissected out and were found healthy, but there was a mass of glands pressing on the receptaculum. Dr. Croom then referred to the literature on the subject and pointed out the differences which some authorities held to exist between chylous ascites and adipose ascites.

Dr. R. JARDINE (Glasgow) made a further contribution on the Treatment of Eclampsia by Saline Infusion. In the last session he had submitted to the society the results in 12 cases treated in this way; he had published five more

and he now gave details of another series of five cases. In every case the diuretic effect of the saline injection had been prompt and marked. The solution used consisted of one drachm each of chloride and acetate of sodium to the pint of sterilised water. From two to three pints were injected underneath the breasts, between them and the chest-wall, or, if required, into the loose abdominal subcutaneous tissue. These injections could be repeated. This treatment was accompanied by a saline purge, sometimes with bromide and chloral and 10 minims by hypodermic injection of tincture of veratrum viride. Of the 22 cases six of the patients had died; one died from perforating duodenal ulcer. One of the patients was treated with ordinary saline solution. This result compared favourably with other lines of treatment in eclampsia, especially after taking into consideration that many of the patients had been seized with fits for several hours before admission to the Glasgow Maternity Hospital. Some had been prognosed as hopeless. There was no risk in giving these large infusions; out of at least 200 injections he had never found any abscess formation. Of course, strict aseptic precautions had to be followed. In one fatal case conjugate deviation of the eyes to the left was present, with the face slightly drawn to the right, and the left arm seemed paralysed; but post mortem no brain lesion was found, though its substance was somewhat anæmic.—THE PRESIDENT, Dr. S. MCVIE, Dr. HALLIDAY CROOM, Dr. JAS. RITCHIE, Dr. J. FOULIS, Dr. F. W. N. HAULTAIN, and Dr. J. W. BALLANTYNE discussed the paper.

Dr. F. W. N. HAULTAIN read a paper on Pathological Amenorrhœa from other than Constitutional Causes. Details of cases of atresia hymenalis, atresia vaginalis, atresia cervicis, and the necessary operative treatment were given. There were also cases of amenorrhœa due to functional inactivity of the uterus or the ovaries or to their insufficient development. In other cases the uterus and ovaries were apparently normal, and yet menstruation did not appear. These were evidently due to some affection of the central nervous system. Acquired amenorrhœa might be due to shock, fear of pregnancy, or other nervous cause. Prolonged rest from work was very helpful in the treatment of this class. The intra-uterine application of electricity, negative pole (Apostoli), was very helpful in some cases of cessation of the flow after it had been in regular function. In acquired amenorrhœa due primarily to want of ovarian activity alone ovarian extract was beneficial; the dose usually given was 15 grains daily, but 40 grains daily might be given without any untoward effect.

Dr. J. FOULIS gave a microscopical demonstration of the Embryo of the Deer, showing that the umbilical cord had no amniotic covering.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF PATHOLOGY.

Growth of the Typhoid Bacillus.—Histology of Tuberculosis of the Intestines and the Liver.—Corneal Dermoid Tumour.—X Rays in Dental Pathology.—Exhibition of Specimens.

A MEETING of this section was held on Feb. 23rd, Dr. A. C. O'SULLIVAN, the President, being in the chair.

Professor E. J. MCWEENEY read a note on the Effect of Certain Varieties of the Nutrient Medium on the Growth of the Typhoid Bacillus, in which he stated that experimental cultures made by him showed that (1) the growth improved with increasing addition of decinormal sodium hydrate to the unneutralised gelatin up to the beginning of alkalinity (indicator phenolphthalein); (2) the addition of salt, in quantities varying from 0·1 to 1 per cent., to the fully-neutralised gelatin (same indicator) made no difference in the amount of growth; (3) the omission of both salt and peptone exercised no appreciably unfavourable influence on the growth in gelatin made with meat decoction; (4) addition of quantities of phenol to gelatin in the proportion of 0·05 to 0·5 per cent. exercised an inhibitory influence on all growths when the addition exceeded 0·07 per cent.; between 0·05 and 0·07 the effect was to check the anaerobic growth; and (5) Parietti's solution added to ordinary bouillon suppressed the growth of the typhoid bacillus when the bacillus coli was also present. The addition of nine drops (0·3 cubic centimetre) to 10 cubic centimetres of bouillon, to which was subsequently added a few drops of a mixture containing both the typhoid bacillus and the bacillus coli (e.g., bile from a patient dead from typhoid fever), caused such retardation of the growths produced by plating out the tube on gelatin as to make them closely resemble true typhoid bacillus colonies. Tests, however, proved that nothing but bacillus coli grew in the Parietti's tube, although ordinary agar plates from the same material yielded an abundance of typhoid bacillus colonies. It was on the suppression of the typhoid bacillus by the Parietti test that the speaker desired to lay special stress.—The PRESIDENT said that in the first experiment on the typhoid bacillus it was really decrease of acidity that was being estimated. It would be interesting to know if a further condition of alkalinity would make the growth go off, or possibly make a stronger growth. The observation that phenol acted first on the anaerobic growths might be explained by the fact that typhoid bacilli were what were called facultative anaerobes—that is, their natural mode of growth was aerobic, and their anaerobic growth was, therefore, strained, and the inhibitory drug acted first on the restrained kind of growth. The method of Parietti was very useful for the analysis of water, but it was entirely useless for analysing milk for the typhoid bacillus, because there were so many organisms in milk which resisted a mixture of hydrochloric acid and carbolic acid better than the typhoid bacillus.—Professor MCWEENEY, in reply, said he agreed with the statement that Parietti's solution was of no use for the analysis of milk. He acknowledged the justice of the correction with regard to the reaction—he should have said decrease of acidity.

Professor MCWEENEY showed preparations illustrating the Histology of Tuberculosis of the Intestines and Liver. They were taken from a patient who had died from diarrhœa due to tuberculous enteritis. The floor of the very extensive ulcers was composed of granulation tissue consisting of cells with simple and polymorphous nuclei, but seemingly devoid of giant cells. Enormous multitudes of tubercle bacilli were lying between these cells and were often actually in contact with, but not within, them; yet the tissue showed practically no sign of caseation—a remarkable fact in view of the extensive areas of caseation met with so commonly in tuberculous lymphatic glands, where even the most careful examination failed to reveal a single bacillus. The toxin that produced caseation might conceivably be contained within the bacillary bodies and only become free by their breakdown. This, at any rate, would be an explanation of the frequent want of association between demonstrable bacilli and extensive caseation. The liver sections constituted a classic object for the study of the histogenesis of tubercle, showing as they did tubercles in the very earliest stage of development, when they consisted of only a few epithelioid and lymphoid nuclei. Professor McWeeney had arrived at the conclusion that many of the tubercles began by proliferation of the nuclei of intra-lobular capillary endothelium.

Mr. ARTHUR H. BENSON and Dr. H. C. EARL described and showed sections of a Dermoid Tumour removed from the eye of a child, aged four years. The growth straddled the cornea-scleral junction, but extended more on the cornea than on the sclerotic, and occupied the whole thickness of the cornea. It was only slightly raised above the surrounding tissues, and was of a creamy-white colour, and slightly rough, or rather unpolished, on the surface. It grew, contrary to the usual custom, at the inferior nasal side, and extended almost to the corneal apex.

Mr. GEORGE J. GOLDIE demonstrated the usefulness of the x rays in dental cases where other methods of diagnosis had failed. The conditions in which he found the new agent most valuable were: (1) Fracture and dislocation of teeth in the jaw; (2) fracture of the jaw itself; (3) the diagnosis of inflammation round the roots of teeth (alveolar abscess); (4) the diagnosis of inflammation round the roots of teeth, giving rise to symptoms remote from the seat of lesion (neuralgia, trismus, &c.); (5) the treatment of impacted and in-coming wisdom teeth; (6) the normal eruption of the permanent teeth following the temporary or milk teeth; (7) the abnormal eruption of the same; (8) the absence or presence of any missing tooth in the jaw when its eruption has been abnormally delayed; (9) the regulation of teeth malposed in the jaw; (10) many purely clinical dental conditions which could only be mentioned without being described; (11) exostosis of roots of teeth; and (12) foreign bodies in the antrum of Highmore.—Dr. WILLIAM S. HAUGHTON then described how the various difficulties encountered had been overcome by the use of

"cut celluloid" photographic films, enclosed in orange and black paper bags, which were again enclosed in an india-rubber bag specially manufactured, as most samples of rubber contained so much sulphur as to render them very opaque to x rays. These films had to be cut small enough to go inside the patient's mouth, and the best position in which to place the film for each individual tooth required a careful study of the anatomical relations of each tooth to its surrounding alveolus. For a clamp to hold the film in position he preferred the finger of a skilled assistant in the mouth, while the other hand made counter-pressure on the head outside. This, combined with the head-rest of a dental chair, had proved very satisfactory. The best working distance of the tube from the film was from eight to 10 inches and the usual exposure was from 90 seconds to two minutes.

Professor MCWEENEY exhibited a specimen of Spontaneous Rupture of the Œsophagus. The patient, an alcoholic male, aged 40 years, had retched violently before going to his work. His face and neck became swollen and his breathing difficult, so that he was forced to go to the Mater Misericordiæ Hospital, where he died a few hours after admission. At the necropsy enormous swelling of the face and neck, due to subcutaneous emphysema, was found. The primary lesion was in the posterior mediastinum, the contents of which were coated with grey pultaceous matter, which could be seen escaping through a longitudinal rent half an inch long in the anterior surface of the œsophagus just above the diaphragm. The immediate cause of death was intense œdema of both lungs, associated with failure of a fatty right heart.

Dr. H. C. EARL exhibited a specimen of Cyclopian Fœtus, with Supernumerary Fingers and Diaphragmatic Hernia.

LIVERPOOL MEDICAL INSTITUTION.—A meeting of this society was held on March 22nd, Mr. Edgar Browne, the President, being in the chair.—Dr. K. Grossmann showed a case of Double Congenital Anophthalmos in a child 11 weeks old. The eyelids turned inwards and opened through a small rima into a conical space lined with conjunctiva. The eyelashes were well formed, with an absence of puncta lacrymalia. The conjunctiva at the fornix formed a straight cone whose apex in the left eye was a whitish, and in the right eye a bluish, point. The well-developed state of the adjacent structures indicated that the arrest of development of the eyeballs and their probable subsequent disappearance had taken place at an advanced stage of fœtal life.—Mr. W. B. Bennett showed a woman suffering from Motor Aphasia, Right Hemianæsthesia, and Paralysis of the Right Side of the Tongue, but no hemiplegia; he considered the lesion to be a softening in the sub-cortical area of the brain.—Mr. G. Reinhardt Anderson read notes of a case of Strangulated Obturator Hernia in a woman, aged 75 years. The patient was seized with pain in the left thigh and vomiting; when first seen, 24 hours later, the vomiting had ceased and the pain was not so marked; next day all the symptoms pointed to complete obstruction, there being fæcal vomiting and abdominal distension. There was some fulness in the left femoral region and the diagnosis was that of partial enterocele in the left femoral canal. Operation by incision over the femoral region revealed nothing, the lump felt being an enlarged gland. The patient was unrelieved and too ill apparently for laparotomy. Five hours later the femoral wound was reopened and a deep dissection revealed a hernia through the obturator foramen. This was reduced and the patient made a rapid recovery and was now well.—Mr. Rushton Parker congratulated Mr. Anderson on the promptitude with which he had acted and thus saved the patient's life; the condition was one of great rarity and in an operative experience of 510 herniotomies he had never met with obturator hernia.—Dr. Lloyd Roberts described the sequence of the symptoms and physical signs in the course of a typical case of Mediastino-pericarditis and read notes of a case he had met with in a boy aged five years.—Dr. William Alexander read a paper on the Prevalence of Ophthalmia in Liverpool: its Prevention and Treatment. In three years nearly 1000 cases of ophthalmia in various forms had been admitted into the Liverpool Workhouse Infirmary. These all came from the lowest parts of the city and many of the children were admitted direct from their attendance at school. In one-tenth of the cases there was impairment of vision; some were temporarily blind, and in many the eyes were hopelessly lost. To prevent the disease it would be necessary to have ophthalmia notified as a contagious disease and arrangements made for the effectual treatment of each case notified before its return to school. The patients' homes should be visited and all the family inspected, for often other children had acquired the disease in a latent form. All schools should be periodically visited and latent cases eliminated. The treatment of granular lids was described as hygienic and local and the methods for the former adopted by the Select Vestry were discussed. He thought that the best results in the treatment of trachoma were obtained from the use of the solid sulphate of copper in cases where the discharge was slight and the granules distinct; when the discharge was greater he used nitrate of silver solution. The relations between follicular conjunctivitis and granular lids were discussed and it was shown how difficult it was to diagnose one from the other. Follicular conjunctivitis was comparatively rare in Liverpool and many surgeons were doubtful of its existence as a distinct disease. The paper was illustrated by cases, photographs, drawings, and lantern slides.—Dr. K. Grossmann urged the importance of classification and considered the follicular and granular forms as distinct diseases and not as stages in the same disease. Granular conjunctivitis he considered a rare disease in Liverpool after a long hospital experience in one of the poorest parts of the city. The clinical facts were the guides as to prophylaxis and treatment.—Dr. A. S. Griffith stated that in every case of muco-purulent catarrh he had found the Koch-Week's bacillus; in the scanty discharge of chronic granular conjunctivitis there was no organism found to which the condition could be ascribed, but when trachoma developed the Koch-Week's bacillus was found in large numbers. He assumed that bacilli entered the tissues and, acting as an irritant, resulted in the formation of granules, and that the particular bacillus was probably Koch-Week's bacillus acting with a small amount of virulence.—Mr. Richard Williams, Mr. T. H. Bickerton, Dr. S. H. House, Dr. C. J. Macalister, Professor R. W. Boyce, and Mr. C. G. Lee also took part in the discussion, and Dr. Alexander replied.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on March 15th, the President, Dr. D. Burgess, being in the chair.—Dr. A. J. Hall showed cases of (1) Congenital Syphilis, (2) Lichen Syphiliticus, (3) Tuberculous Syphilide simulating Lupus, and read notes of a case of Iodide of Potassium Eruption.—Mr. W. Dale James showed: 1. A case of Pityriasis Rubra Pilaris in a man, aged 30 years. It began when he was eight years old upon his right shin, which was the only patch he had. The case had been reported frequently, the patient having four years ago been under Dr. J. F. Payne at St. Thomas's Hospital. The mortar-like accumulation and the presence of plugs in the follicular openings were very diagnostic. 2. A beautifully developed Tertiary Macular Syphilide.—Mr. Simeon Snell showed the following patients: (1) A youth, aged about 20 years, with a large solitary Tubercle of the Iris (left eye). The lungs were free from disease, but there was thickening of the left epididymis; (2) a boy with Ectropion treated with Thiersch Graft; (3) two cases of Symblepharon treated with Thiersch Graft; (4) a man with a Piece of Steel embedded in the Retina; (5) a child with Palsy of both External Recti after Diphtheria; and (6) a woman with very marked Periarteritis of the Central Retinal Artery.—Mr. Snell also exhibited: (*a*) A water-colour drawing of a Congenital Papilloma of the Conjunctiva which was sufficiently long to protrude through the palpebral fissure and to rest on the lower eyelid; (*b*) a series of microscopic photographs, including amongst them three instances of Rodent Ulcer, microscopical sections of which were also shown; (*c*) Embolism of a Branch of the Central Artery of the Retina (perimeter charts of four cases).—Mr. Snell also showed a beautiful work which was illustrated by photographs from large water-colour drawings of forest and other rural scenery executed by a patient who had several years since undergone cataract extraction at his hands. The same gentleman had since the operation been a successful exhibitor at the Royal Academy.—Mr. R. J. Pye-Smith showed two cases in which he had performed Laparo-pylephleb-anastomosis (the operation introduced by Dr. D. Drummond and Mr. Rutherford Morison in 1896). 1. A girl, aged 18 years, had been under the care of Dr. Burgess at the Sheffield Royal Hospital with enlarged liver and spleen and ascites for three years. She had been tapped frequently, and as the abdomen refilled in a month

Dr. Burgess requested Mr. Pye-Smith to operate. At the operation (on Nov. 10th, 1899) the capsule of the liver was found to be thick and the spleen to be greatly enlarged. The liver, spleen, and omentum were attached to the anterior abdominal parietes. During the four months that had elapsed since the operation a considerable quantity of fluid had gradually accumulated, but the improvement in this and in other respects had been very great. 2. A man, aged 31 years, was admitted to the Sheffield Royal Hospital, under the care of Dr. Burgess, in September, 1899, for hæmatemesis. Whilst in the hospital slight ascites developed, but subsided under medicinal treatment. There was an alcoholic history and Dr. Burgess diagnosed cirrhosis and asked Mr. Pye-Smith to operate. At the operation (on Jan. 16th, 1900) a hob-nailed condition of liver was found with an enlarged spleen, but no ascites. The left lobe of the liver was attached to the anterior parietes and the omentum was fixed along the edge of the wound. The patient was now, two months after the operation, in a comfortable condition. It was, of course, too early to judge of ultimate results in either of these cases. —Dr. Sinclair White showed: 1. Unusual Gall-stones. 2. A boy on whom Estlander's Operation had been performed five years previously. The lung on the affected side had regained almost its normal size, and there was no lateral curvature of the spine and very little deformity. 3. A rapidly growing Sarcoma of the Scapula in a case which was subsequently dealt with by the total excision of the scapula. 4. A woman with Early Cancer of the Left Breast, the right mamma having been removed for cancer six months previously. There was no evidence of cancer elsewhere.—Dr. Stanley Riseley showed a man, aged 44 years, who seven years ago was struck on the Inner Side of the Cornea by a piece of coal. The patient said that three years afterwards a growth appeared in the same situation and that 18 months subsequently part of the growth was removed. He came under Dr. Riseley's care four months ago with a growth firmly attached to the cornea and conjunctiva which on microscopical examination proved to be an epithelioma. There were apparently no glands involved. The growth had rapidly increased in size. The patient would not consent to operation.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Feb. 20th. the President, Mr. W. H. Horrocks, being in the chair.—Dr. A. Bronner showed specimens illustrating Growths of the Nose.—Dr. R. H. Crowley showed the following specimens:—(1) Cancer of the Uterus with Secondary Deposit in the Lungs; (2) a Thrombosis of the Pulmonary Artery firmly adherent and evidently of old standing; (3) Perforating Tuberculous Ulcer of the Small Intestine; and (4) the Brain of a Microcephalic Idiot three years old, the child weighing 14½ lb. and the brain weighing 11 oz.—Dr. C. F. M. Althorp showed a specimen of a very extensive Tumour of the Thyroid Gland occurring in a child seven years old. The patient, who had been apparently in good health till about three months before admission to hospital, was said to have developed whooping-cough and soon afterwards the mother noticed an enlargement of the neck. The child was found after admission to suffer from attacks of severe inspiratory dyspnœa, which were at first relieved by medicine (belladonna). But this drug soon lost its effect and failed to control the paroxysms. The thyroid body was seen to be greatly enlarged laterally and the isthmus was much thickened. The isthmus of the thyroid was exposed and divided between two ligatures. This gave great relief and for a fortnight the child had no attack of dyspnœa; at the end of that time, however, the patient had another paroxysm which proved fatal. On post-mortem examination there was found to be a large tumour of the thyroid body which spread downwards into the mediastinum completely surrounding the trachea and invading the wall of the right auricle. The growth was a lympho-sarcoma.—Dr. R. C. F. Rabagliati showed a Portion of the Ramus of the Lower Jaw which had been removed by operation. The patient had a cystic swelling of the jaw which had been repeatedly tapped without relief and which was supposed to be sarcomatous. The implicated portion of the jaw was consequently removed.—The President showed a Right Tubal Pregnancy of about six weeks' duration which had ruptured into the broad ligament and was removed by abdominal section.—Dr. J. Metcalfe showed two Sarcomatous Tumours which had been removed from the popliteal region at the site of an old bullet-wound received in battle 18 years before.—Dr. T. Jason Wood related a case of Ovarian Tumour of an unusual character. The patient was a married woman, aged 48 years, who was admitted to hospital on July 29th, 1899, with a history of abdominal pain and swelling of six months' duration. The abdomen was uniformly distended by a tense cyst which reached two inches above the umbilicus. There was much tenderness on pressure. The flanks were resonant to percussion. On vaginal examination the uterus was found to be high up and fixed. On August 4th, under the influence of ether, the abdomen was opened below the umbilicus. The peritoneum was greatly thickened and the cyst was universally adherent. It was multilocular in character and some of the loculi contained fœtid green pus. During separation of the cyst the wall gave way in places and allowed some of the pus to escape into the peritoneal cavity. When all the adhesions had been separated it was found to be possible to remove the cyst, there being no trace of a pedicle. The small intestines were confined to the upper part of the abdomen by adhesions so that the cavity occupied by the tumour remained. It was washed out with hot water and loosely packed with alembroth gauze; the end of the gauze was brought out of the wound, which was closed, and a cotton-wool dressing was applied. The ovaries could not be recognised owing to the great inflammatory thickening of the peritoneum. The gauze was removed after 48 hours and a tube was substituted. The patient made a good recovery and was discharged on Sept. 16th. Dr. Wood suggested that the absence of a pedicle was to be accounted for by the ovary becoming detached from its usual connexions and then undergoing cystic change.—Dr. J. Basil Hall read a paper on Gastrostomy with an account of two cases. He strongly advocated the performance of gastrostomy in cases of malignant disease of the œsophagus and urged that the operation should not be delayed after the power of swallowing solid food was gone.—The President, Dr. Althorp, Dr. Wood, and Dr. Lodge took part in the discussion.

EPIDEMIOLOGICAL SOCIETY.—A meeting of this society was held on March 16th, Dr. Franklin Parsons, the President, being in the chair.—Mr. T. Robinson, county medical officer of Leicestershire, read a paper on Measles, its Distribution and Control, being the experience of an epidemic of over 2000 cases. He said that the borough of Burton-on-Trent in 1893, when he held the post of medical officer of health, was visited by an extensive epidemic of measles. The estimated population was 61,664, composed chiefly of artisans and brewery employés, and the houses occupied were mostly four-roomed and six-roomed. The Notification Act had been applied to measles since Dec. 1st, 1893. There had been three biennial epidemics of measles during the last six years. In the epidemic of 1898 there were 2048 known cases and 31 deaths, giving a case fatality of only 1 5 per cent. and a death-rate of 0 60 per 1000. It was probable that 95 per cent. of all the cases were notified or came to the knowledge of the sanitary authority. The ratio of children under school age (called babies) to infant school children (called infants) attacked was from 80 to 100. The epidemic first started through a tea-meeting and entertainment, and two infants in arms were the first cases in houses where the mothers but not the babies had been to this meeting. Later two Sunday-schools were clearly responsible for the distribution of the disease to two other districts. Amongst babies who were the first cases in houses, 26 per cent. of the cases occurred in houses where there was a case next door, 11½ per cent. where a case was two doors off, and 5½ and 6 per cent. where cases were three and four doors off; and amongst infants the respective percentages were 13, 10, 6, and 6½. The conclusions deduced were (*a*) that measles first introduced into a district through an infant Sunday school or day school at once spread rapidly in that school and district, and that the degree of rapidity and the extent of the spread were inversely proportionate to the frequency of epidemics unless early closure were carried out; (*b*) that the disease first introduced into a district by means of isolated cases did not spread to any extent until the infant school became infected; (*c*) that Sunday schools were an important factor in the distribution of the disease; (*d*) that the babies might be infected to a slight degree and under certain circumstances before the infant school was infected; but the greater proportion were infected a short time after the school; and (*e*) that the

danger of house-to-house infection was a serious one amongst the baby class, and that in proportion to the proximity of an infected house (where houses were in close contact) so was the danger of infection. In all cases a school was closed within three days of its being known to be "a source of infection," as were the Sunday schools in the same districts. The incidence in the boys' and girls' schools in districts where there had been biennial epidemics was practically *nil*; but where there had been no real epidemic for at least six years the incidence amounted to as much as 20 per cent., in one case, of those in average attendance. The conclusions come to on school closure were (1) that in nearly every instance this measure was carried out too late; (2) that good results could be obtained, not only amongst infants but babies also, when schools were closed at once without waiting for the infant department to become "a source of infection"; (3) that when an epidemic occurred every two years the infant schools only need be closed, but with longer intervals it became necessary to close the boys' and girls' schools also; (4) that sanitary authorities should have the same power of compulsory closure over Sunday schools as over day schools; and (5) that the power to close schools for a short period—one or two days—on account of a threatened epidemic, especially of measles, would be a most useful measure. For "information of the presence of measles," compulsory notification under the Notification Act was the chief source, but should be supplemented by other methods.—Dr. R. Dudfield, Mr. Shirley Murphy, Dr. W. A. Bond, and the President took part in the discussion.

HARVEIAN SOCIETY OF LONDON.—A clinical evening of this society was held on March 15th, Dr. W. H. Lamb, the President, being in the chair.—Dr. Cautley showed a female infant who had recovered from an attack of Basal Meningitis of three months' duration. The child was the third in the family, the others being healthy. She came under treatment on Nov. 23rd, aged 10 months, with a history of a measles rash on Nov. 4th and a fall on the head on Nov. 16th. Drowsiness, restlessness, and irritability were noted on the day after the fall, and on the next day stiffness of the muscles of the neck, retraction of the neck with pain on movement, frequent pulse, fever, and constipation. The course of the illness was characterised by the above symptoms, frequent vomiting, tache cérébrale, retracted abdomen, screaming attacks, and a hectic type of temperature ranging between 98° and 104° F. For two months no improvement took place, but in the course of another month the fever and symptoms subsided, with temporary relapses, and after Feb. 11th the temperature remained normal. During the illness the weight diminished from 14 lb. 8 oz. to 11 lb. 5 oz. It was rapidly regained during convalescence, a gain of 4 lb. taking place in 17 days. The child now weighed 15 lb. 10 oz. and was apparently quite well.—Dr. Cautley also showed a case of Congenital Infantile Paraplegia occurring in a boy, aged 21 months, the eighth child of a very healthy family, all the other children being alive and healthy. He was born at full time, labour being easy and not instrumental. He was entirely breast-fed for a year and partially so for another six months. Teething began at the eleventh month and now eight teeth were cut. He was quite healthy until he had an attack of diarrhœa and vomiting, followed by a fit, last October. At present he was a large and well-nourished boy with the exception of the lower limbs. These latter were small and ill-developed. The patellar and plantar reflexes were much exaggerated. He had never crawled, could not stand, and raised himself with much difficulty into the sitting posture which he maintained with ease. He appeared to be mentally deficient. The weakness of the limbs was only noted in October, but had almost certainly been in existence since birth.—Dr. Macevoy showed a boy, three and a half years of age, suffering from Little's Disease (cerebral diplegia). He was born prematurely (at the seventh month), delivery being instrumental, and for some minutes he was in an asphyxiated condition. The presentation was placental (placenta prævia). He had severe rachitis between eight months and 14 months; he could not sit up before the age of 18 months; and only stood on his legs when two and a half years of age. His gait since then had always been typically spastic and ataxic. He frequently fell. Rigidity, though worse in the legs, was present in the arms and neck. He had athetosis and incoördination of the arms, with athetotic movements of the feet and head. The plantar reflex gave an extensor reaction; the knee-jerks were brisk, but occasionally were not obtained on account of the rigidity. There was no clonus. The boy's general development was good and he was fairly intelligent, but could only say a few syllables.—Dr. Leonard Guthrie showed a lad, aged 18 years, whose symptoms were regarded as due to tumours either in the neighbourhood of the left optic thalamus or in the right cerebellum.—Dr. Alfred Eddowes showed the following cases: (1) A girl presenting a single Patch of Lupus on the left side of the face and a Patch of Impetigo on the opposite side; (2) a case of Lupus Erythematosus of the Scalp of 12 years' duration in the form of two perfectly symmetrical patches about three inches long and nearly two inches wide running vertically down the sides of the scalp about an inch behind the ears; and (3) a girl recovering from Leucodermia whose back three years ago was of a dull yellow colour with numerous white patches on it, but the pigmentation of the whole back was now practically normal.

PATHOLOGICAL SOCIETY OF MANCHESTER.—A meeting of this society was held at Owens College on March 14th, Mr. W. Thorburn, the President, being in the chair.—Dr. Powell White showed specimens of Bacilli Diphtheriæ showing Branching. They were obtained from a culture on agar-agar 48 hours old. The culture was remarkable for the large size of the club-shaped forms, some of which measured as much as 40 μ in length. These large forms, as well as those of more normal size, showed well-marked true branching, the branches being clubbed at the extremities. Sub-cultures showed ordinary forms of the bacillus only.—Dr. J. R. Carver showed several specimens of Non-typical Diphtheria Bacilli which he had met with in the examination of specimens sent up by various sanitary authorities. He showed bacilli of great length interlacing with each other and showing doubtful branchings, which seemed to merit the term "streptothricial" bacilli. The long forms disappeared on sub-culture. Other specimens showed bacilli with enormous pear-shaped heads; and in another the sheath of the bacillus was very faintly stained, while the protoplasm was collected into a chain of fine granules giving the appearance of an encapsuled streptococcus. He thought that the greatest difficulty in the identification of the bacillus was in doubtful forms of the short bacilli, especially when these somewhat approached the bacillus coli type. He had found that pneumococci in process of division might resemble a double club-shaped bacillus and show a certain amount of meta-chromatism.—Dr. M. Cowen and Dr. David Orr made a preliminary communication on the Morbid Anatomy of General Paralysis of the Insane and illustrated their remarks with microscopical specimens. They described the changes in the nerve cells of the cortex, pons, medulla, and cord, in the medullated fibre of the cortex and cord, and the neuroglia and vessel changes in the cortex. They pointed out that the 'cell changes—i.e., the chromatolysis—was of a slow chronic nature, invading more especially the perinuclear region, and was associated with marked increase of the cell pigment, so bearing a striking similarity to the senile involution changes described by Marinesco. In the cord they found the damaged fibres almost entirely confined to the crossed pyramidal tracts with a few scattered morbid fibres in the posterior, lateral, and anterior pyramidal tracts. Neuroglia proliferation and hypertrophy were demonstrated especially in the white matter, sub-pial, and innermost layers of grey matter. Peri-arteritis of more or less degree was shown to affect the arterioles in every case. They were of opinion, from their investigations in early general paralysis, that the nerve cell was the first to degenerate and later the tangential and other medullated fibres.—Dr. E. S. Yonge showed specimens illustrating Acute Phagedæna of the Nose and Face. The patient, a man, aged 26 years, gave a history of alcoholism and syphilis and was suffering from phthisis. Phagedænic ulceration began in the roof of the mouth, immediately behind the incisor teeth; it spread into the nose and in a few days completely destroyed the soft parts of that organ. The right side of the face and the right eye then rapidly became gangrenous and the air-sinuses were invaded. Finally, the process involved the left side of the face and the left eye. Death occurred one month after the onset.—Dr. R. B. Wild showed preparations from a case of Cancer of the Body of the Stomach, in which the orifices were unaffected, but a large part of the anterior wall, lesser curvature, and posterior wall was occupied by a firm scirrhous growth. One nodule of the growth within the stomach was prominent and presented a horny

degeneration of the epithelial cells. The liver presented several secondary nodules showing similar horny changes.—Other preparations were shown as card specimens.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.—A meeting of this society was held on March 9th, Dr. A. Newsholme, the President, being in the chair.—Dr. J. Priestley, medical officer of health of Lambeth, read a paper on Area Condemnation under the Housing Acts, Part I., which, though simple enough in theory, was in practice tedious and costly, while during the long delay the sanitary condition of the area went from bad to worse. He held that in a condemned area the majority of the houses were as a rule capable of repair, a minority only being wholly unfit for human habitation, and he thought that a system of vigilant house-to-house inspection with abatement of nuisances and enforcement of repairs, the few houses only whose conditions were irremediable being demolished one at a time, with no wholesale displacement of the population, was in every way to be preferred. He had constantly carried it out in his district, which he thought would compare favourably with an adjacent one where areas had been ruthlessly condemned. Such displacement of the population served but to create overcrowding with all its concomitant evils in other districts which soon became converted into slums. It was not possible to provide for an equal number of persons on the same area under improved sanitary conditions, and the better houses springing up at higher rents than the labourer could afford were promptly appropriated by the thriving artisans. He believed that more good could be effected by Part II., by enforcing the provisions of the Public Health Act, by constant house-to-house inspection, and by substituting when these means failed house condemnation and house demolition for the condemnation and clearance of areas.—Dr. F. J. Allan (Strand) said that whatever might be the case in Dr. Priestley's districts the conditions prevailing elsewhere were such that the application of Part II. of the Housing Act, or the clauses of the Public Health Act bearing on the structural and sanitary conditions of houses, might be most unsatisfactory, if not futile. He could not understand what Dr. Priestley meant by his statement that in "unhealthy areas" the majority of the houses were capable of being made habitable.—Dr. A. M. Chalmers (Glasgow) gave an account of the practice of the authorities in his city, a combination of action under Parts I. and II. He admitted that there were circumstances under which Part I. alone could be of use, but it should not be adopted without necessity, for the mere clearing of the area cost on an average £50 per head of the displaced population.—Mr. Shirley Murphy maintained that Dr. Priestley had totally misconceived the purposes of Part I. Wholesale clearances were unavoidable with slum property, courts, alleys, and back-to-back houses.—Dr. J. F. J. Sykes and the President also took part in the discussion.

BRITISH BALNEOLOGICAL AND CLIMATOLOGICAL SOCIETY.—A meeting of this society was held on March 8th at 20, Hanover-square, the President, Dr. Ivor Murray (Scarborough), being in the chair.—The discussion on the Treatment of Nervous Diseases and Affections by Baths and Climate which was introduced by Dr. Harry Campbell on Jan. 26th was resumed.—The President read a synopsis of the previous discussion.—Dr. Leonard Williams in reopening the discussion said that inasmuch as the graver forms of nervous disease, such as tabes, general paralysis of the insane, and the like, were essentially diseases of city life it was reasonable to suppose that better results were to be obtained by removing patients from such surroundings than by drug treatment alone. He instanced cases to illustrate the good effects of climatic treatment in these affections and related a case of epilepsy which had apparently been very favourably influenced by a soothing climate.—Dr. Alexander Morison stated that the cure of organic nerve lesions by climatic and balneological treatment might be excluded from discussion. In this respect the scope of treatment in general applied to these agencies in the same measure as to other means rationally used.—Dr. W. S. Hedley considered that the health resort plays very much the same part in diseases of the nervous system that it does in other classes of disease.—Dr. Knowsley Sibley said that for some years he had been accustomed to treat various forms of nervous diseases by the local application of dry hot air and generally with undoubted success. The cases which did well were insomnia, epilepsy, many forms of neuralgia and neuritis, together with various paralyses of hysterical origin, so also chorea was especially amenable, the movement frequently quite ceasing while the limb was under treatment. Ménière's disease appeared also to be benefited. Old-standing cases of paralysis, especially those caused by lead palsy and those of traumatic origin, often improved. He had been disappointed with the result of this treatment in marked cases of tabes, paralysis agitans, and writer's cramp, but he had never seen any harm arise from it.—Dr. Harry Campbell remarked that this was the first time that a discussion of this kind had taken place in this country. We had relied too much upon drugs in the treatment of nervous diseases, being in this respect much behind continental physicians.—Dr. R. W. Felkin, Mr. G. H. Thompson (Buxton), and Mr. Shirley Jones (Droitwich) also took part in the discussion.—Dr. William Bain (Harrogate) read a paper entitled "The Effects of Luminous and Heat-rays on the Local and General Temperatures."

BIRKENHEAD MEDICAL SOCIETY.—A meeting of this society was held on March 6th, Mr. H. Nazeby Harrington, the President, being in the chair.—Dr. W. R. Dalzell read a paper on General Paralysis of the Insane. After briefly reviewing the history of the affection and describing the symptoms of various types met with in asylums and in general practice he passed on to the consideration of its etiology and pathology, giving as the chief factors in its etiology (1) over-exertion, (2) syphilis, (3) alcoholism, and (4) excessive venery. As to distribution it was found all over the civilised world, though it occurred chiefly in the great industrial centres and seldom in the rural districts. It occurred much more frequently in males than in females and it was essentially a poor man's disease, though it was also found in the higher ranks of life. Passing to diagnosis Dr. Dalzell enumerated the following affections amongst others which might be confounded with it, giving the differential diagnosis in each case: (1) acute recent mania, (2) alcoholic paralysis, (3) pseudo-general paralysis, (4) syphilitic brain disease, (5) lead paralysis, (6) senile dementia, (7) epileptic paralysis, (8) primary dementia, and (9) locomotor ataxia. As to prognosis his experience was that nearly all cases ended fatally, usually through some intercurrent disease—the chief of which was phthisis—within three years. With regard to treatment there was nothing known which would arrest the disease and one had to be content with general hygienic measures, the removal of all nerve excitants, and the assistance of hypnotic and nervous tonics.—A discussion on Medical Politics took place and the following resolutions were unanimously passed:—

1. *Medical Acts.*—That in the opinion of this society the Medical Acts require amendment especially in regard to illicit practice, death certification, and the Inebriate and Lunacy Acts.

2. *Contract practice.*—That in the opinion of this society in contract practice there should be a minimum rate of 5s. per member per annum, and this society condemns the practice of canvassing in connexion with medical clubs.

3. *Medical charities.*—*(a)* That in the opinion of this society there is considerable abuse in connexion with medical charities, and it is desirable that the medical profession should be directly represented on the committees by which they are managed. *(b)* That the staffs of the various hospitals be requested to combine in getting a visitor appointed to inquire into the circumstances of patients applying for relief in order to prevent such abuse.

4. *Midwives question.*—That in the opinion of this society it is not desirable that midwives should be registered according to the provisions of the Bill at present before the House of Commons.

5. *Direct representation.*—That in the opinion of this society it is desirable that general practitioners should have a larger representation on the General Medical Council.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on March 7th, Dr. H. Michie, the President, being in the chair.—Dr. H. Handford showed two cases of Nervous Disease following Typhoid Fever. Both were cases of young men, in one of whom symptoms of lateral sclerosis with increased reflexes and the typical spastic gait, &c., were observed; in the other case the signs and symptoms were those of a patient with tabes dorsalis, knee-jerks being abolished and ataxia existing. Both cases were on the high road to recovery when shown, but there still existed indications of the above-named diseases. The interest of the cases lay in their extreme rarity and in their close simulation of the above-named diseases, from which they differed, however, in that they were recovering.—Dr. J. Mackenzie read a paper on Notes of Cases of Diphtheria occurring in Private Practice treated by Antitoxin. Dr. Mackenzie first classified the

cases into groups in accordance with the anatomical situation of the disease; in all there were seven such groups. The number of the cases treated with the serum was 31, and they were the severest cases occurring in Dr. Mackenzie's practice, it not being his habit to inject serum in mild cases. In most, or at least in many, of the cases the disease had existed for nearly a week without being seen. In the whole 31 cases so treated there occurred but two deaths, giving a mortality of just above 6 per cent. Respecting one group of three cases, however, Dr. Mackenzie admitted that there was a possibility that the disease was not true diphtheria, but perhaps a simple acute laryngitis. The patients all recovered, but they were all given the serum. Excluding those three cases there were 28 cases of true diphtheria, and many were of a very severe nature, with a death-roll of two, giving a mortality of 7·1 per cent. only.—The paper was discussed by the President, Mr. R. Woods, Mr. J. S. Bolton, Mr. J. Thompson, and Mr. W. M Willis.—Mr. R. C. Chicken read an account of a New Method of performing Hysterectomy which he had devised for Prolapse of the Uterus, which had for its object not merely the removal of the extruding organ but the formation of a support to the pelvic floor.

HUNTERIAN SOCIETY.—A pathological meeting of this society was held on March 14th, the President, Dr. Dundas Grant, being in the chair.—Dr. Glover Lyon showed a Heart (lent by Dr. Casterton Smelt) the Aortic Valve of which was Incompetent apparently through Extensive Fenestration. This heart had beaten as a rule between 30 and 40 times a minute for 20 months before death, sometimes at a much slower rate.—Dr. Frederick J. Smith showed a specimen of Pachymeningitis Hæmorrhagica, a Large Malignant Growth of Kidney Occurring in a Child aged ten months, Extensive Basic Meningitis with a Small Patch of Old Tubercle of the Lung, Abscess in the Lung and Brain in which there was absence of fœtor, and Adherent Pericardium with old Endocarditis which had presented no signs usually said to indicate adherent pericardium.—Dr. Dundas Grant showed a Nasal Polypus which had occupied the whole naso-pharynx. This had been removed under a general anæsthetic, a course which Dr. Grant recommended in such cases.—Remarks were made upon the cases by Dr. A. Adams, Dr. T. R. Andrews, Dr. W. H. Kelson, Dr. Glover Lyon, Dr. D. Ross, Mr. J. H. Targett, and the President.

ÆSCULAPIAN SOCIETY OF LONDON.—A meeting of this society was held on March 23rd, Mr. A. W. Galloway, the President, being in the chair.—Dr. Thomas G. Stevens read a paper on the Early Diagnosis of Uterine Carcinoma in the course of which he described the different varieties of malignant growth found in the uterus and emphasised the value of a microscopical examination of growths. He thought among the out-patients of a hospital suffering from uterine malignant disease that not 15 per cent. when first seen were at a stage early enough to justify operation. The paper was illustrated by a series of microscopic sections which included one of deciduoma malignum.

SOUTHPORT MEDICAL SOCIETY.—A meeting of this society was held on March 14th, Dr. C. Pinkerton being in the chair.—Mr. Reinhardt Anderson mentioned a case of Perforated Gastric Ulcer on which he had operated with successful result.—Dr. Percy Ashworth read an interesting paper on the Treatment of Cardiac Failure, and a discussion followed.

CORNWALL NURSING ASSOCIATION.—The annual meeting of the Cornwall County Nursing Association was held at Truro on March 16th under the presidency of the Earl of Mount Edgcumbe. The report stated that 14 nurses were now employed in various districts, exclusive of those districts which were supplied by the Queen's nurses. 1030 patients had been attended at their homes, 121 being midwifery cases, and 29,155 visits had been made by the nurses. The expenses for the year amounted to £432 (an increase of £185 over the amount expended in 1898). The expenditure exceeded the income by £100 and the committee had drawn £100 from their capital. The capital is now only £700, and the committee make an urgent appeal for more funds. Thanks were awarded to the medical men in the various districts whose assistance so largely contributed to the success of the association.

Reviews and Notices of Books.

Darwin and Darwinism, Pure and Mixed. By P. Y. ALEXANDER, M.A., LL.D. London: John Bale and Sons. 1899. Pp. 346. Price 7*s.* 6*d.*

THE author of this volume devotes himself chiefly to a series of detached criticisms upon the views of Darwin, particularly directing attention to that naturalist's occasional changes of opinion as shown by contrasting the earlier utterances of "The Origin of Species" and some other works with expressions to be found in his later published biography. Well, no one doubts that in details there was much development of view in the mind of the illustrious author of the theory of natural selection. So far Dr. Alexander has re-discovered the perfectly well known. Dr. Alexander disconcerts us somewhat by his intense admiration of Artemus Ward. We fully share that admiration, but the dicta of that philosopher are not convincing when applied to the natural phenomena otherwise treated with gravity by the author. "You pays your money and you takes your choice" is a phrase which occurs at least twice in the volume and is nowhere explanatory. He begins by instancing the fact that there appear to be some well-established examples of change in structure due directly to the environment to which more weight was allowed by Darwin in later years than formerly when he was disposed to solve all problems with his newly invented key. At the same time, in the animal world at any rate, the examples of such change are not very abundant. The author of the volume before us reminds us of a few well-known instances, such as the brine-pool crustacean and the metamorphosis of the Axolotl into the purely terrestrial Amblystoma. But when all are told only the merest corner of the complex edifice of fact and argument erected by the genius of Darwin is injured. *Apropos* of this same effect of surroundings Dr. Alexander considers the butterfly and the moth. There is apparently no doubt that light does exercise some influence on the development of bright colour; and so, as the author justly points out, do heat and cold. But it is impossible to generalise widely and to arrive at the conclusion that "the brighter and more constant the light that falls on these forms the more splendid they become through complicated chemical processes set up by the light's action." Here, indeed, the author suffers from a too partial survey of insufficient fact. He is by no means alone in this, and many of his opponents conspicuously select some facts and ignore, or are unacquainted with, others. Anyone who has attempted to deal with large subjects, such as the influence of environment, knows well that the enormous amount of material which should be sifted before formulating conclusions is really too great to be grappled with by a single person. To write such books a specialist in every group is required.

It does not appear to us that Dr. Alexander has scored a point in his criticism of the origin of species from "fortuitous" or any kind of variations. He states that, it being admitted that variations occur without any natural selection, the origin of species is solved, for there we see the species ready made without the necessity of waiting for selective influence. That at any rate is how we understand a rather complicated argument on page 65. But this is really the whole gist of the matter, the whole quarrel between Dr. Alexander and those whom he attacks. No one would term, for example, an albino mole as a newly formed species of mole, unless the individuals so coloured bred true and produced in the main moles with this marked colour difference from their ally. On this or any other variation it is asserted a species may be formed by, as it were, fixing the

variation. The author goes on to remark that variation "come into existence in an absolutely unexplained and even unrecognised manner"; and here we can cordially agree with him. That is indeed the crux of evolutionists, and until that problem is grappled with and solved there is but little hope of a consistent theory of the organic world. "Survival of the fittest" is a phrase which has to the full the disadvantages which always encumber such neat and epigrammatic sentences. In criticising it Dr. Alexander is following in the footsteps of many predecessors.

No one doubts for a moment that when a whale engulfs a shoal of herring the fate is indiscriminately dealt out to them, just as the fall of the Tower of Siloam crushed both the just and the unjust; indeed, it has been suggested with some acuteness that survival of the fittest comes to much the same thing as survival of the survivors. Dr. Alexander urges an interesting piece of observation in support of a contention that it is not always the apparently "fittest" that actually survive. "Certain flowers that have abundant nectar are chosen by certain birds for their honey. I have observed by watching them and then examining the heads or clusters after the visits of the birds that all the stronger cups had been mutilated and cut off, and that the young and weakly cups without nectar or a very little of it were left—systematically left." Now this observation, though undoubtedly interesting, is not sufficient. Dr. Alexander does not tell us either the locality of his observations or the kind of birds that perpetrated the damage. The omission is important, for the birds may have been sparrows and their attacks delivered in a country new to them as sparrows. And in that case we cannot lay any stress upon the observation since the most lukewarm adherent of the theory of natural selection would freely admit that time is required for an adjustment to new conditions. Natural selection in fact, to use the commonly used and necessarily crude personification, is not prepared for the victory which has been gained over natural processes by the coming of man into the world.

There is much argument and disputation in Dr. Alexander's book with a great deal of which we cannot agree; and there is also a certain amount of slaying of the slain and the toppling over of men of straw. There is also much that is readable and interesting. Dr. Alexander has not undermined our belief in a great deal of Darwinism and, indeed, he does not profess to do more than deal with "certain lines only of discussion." But we do not regret having spent some time with his book.

An Elementary Course of Practical Zoology. By the late T. JEFFERY PARKER, D.Sc., F.R.S., Professor of Biology in the University of Otago, New Zealand, and W. N. PARKER, Ph D., Professor of Zoology at the University College of South Wales and Monmouthshire. With 156 illustrations. London: Macmillan and Co. Limited. 1900. Pp. 607. Price 10*s.* 6*d.*

THE manual before us is written by the sons of the talented and indefatigable worker Mr. William Kitchin Parker, whose admirable descriptions of his embryological researches, illustrated by his own pencil, on the morphology of the skull in the several classes of the vertebrata fill so many pages of the Transactions of the Royal Society and of the Linnæan Society. The treatise was to be a conjoint one, but by the untimely death of the elder brother, Professor T. J. Parker, the labour of its production has fallen on the shoulders of Professor W. N. Parker, some of the illustrations being drawn by Mr. M. P. Parker, the rest being taken from the Elementary Biology of Professor T. J. Parker.

The plan adopted by the authors differs from that pursued in the similar text-books of Campbell, Nicholson, Gibson, Chalmers, Mitchell, Bidgood, Thomson, and Davis, who commence by familiarising the student with the simplest organisms, leading him by degrees to the more complicated, and on the other hand agrees with that followed by Wells and Davies, Lloyd Morgan, and others, who prefer to exercise the faculty of observation in the first instance on some conspicuous and familiar example of the higher orders, placing before the learner some specimen which is easily procurable and in which the steps of the dissection described in the text can be repeated without difficulty. Both methods have their advantages. Those who commence with the lower organisms can hardly do so without some preliminary education in the manipulation of the microscope and its accessories, section-cutting, staining, and mounting, yet they obtain correct notions of structure; whilst teachers who select a vertebrate for their first object-lesson furnish material the description of which can be easily followed by the members of the class, though these may be a little uncertain as to the nature of nerve and muscle and gland. In the present "Course of Practical Zoology" either plan may be adopted by the reader, for nearly the first half of the book is occupied with a carefully drawn up description of the Anatomy of the Frog, from the pen of Professor T. Jeffery Parker, whilst the remaining and rather larger portion commences with an account of the amœba, which is succeeded by descriptions of the hæmatococcus and euglena, paramœcium, opalina, and vorticella; the hydra and bougainvillia; the earthworm, crayfish, fresh-water mussel, amphioxus, and the dogfish, the series terminating with the rabbit. In each case a very good description of the animal is given, with excellent illustrations, which is followed by "practical directions" as to the mode of conducting the dissection. The work will be found serviceable to the upper classes of schools where natural history is taught and to classes for elementary biology in medical schools.

LIBRARY TABLE.

The Flowering Plant. By J. R. AINSWORTH DAVIS, M.A., F.C.P. Third edition. London: Charles Griffin and Co., Limited. Pp. 195. Price 3*s.* 6*d.*—This is the third edition of a well-known little book designed to illustrate the first principles of botany. It has undergone careful revision and a number of new illustrations have been added together with a chapter on ferns and mosses. This chapter is an important addition, and although in a sense it makes the title of the book somewhat of a misnomer it will materially add to a clear comprehension of the life history and classification of phanerogams. There is also an appendix on practical work dealing with the description of plants—their anatomy, physiology, and histology—and this, too, will be found of immense help to the student. The arrangement of the subject matter is excellent and most of the plants mentioned are easily accessible to the student. Too many technical terms have perhaps been used and the method of explaining them in the text is not likely to attract the beginner in this department of biology. The plan of giving the Latin or Greek derivation in brackets would have been less likely to make the reading tedious. Otherwise the book, which is crammed with information, is a good one.

The Excretion of Urea by the Skin in Health. By C. C. EASTERBROOK, M.A., M.B. Edin., Assistant Physician, Royal Asylum, Edinburgh. Reprint from the *Scottish Medical and Surgical Journal*, February, 1900. Pp. 20.—The author, struck by the amount of urea secreted by the skin in artificial perspirations in the treatment of uræmia, instituted experiments on himself on the amount of urea excreted during exercise while on a fixed mixed diet and concludes that the statements in the current text-books of physiology considerably underestimate the capacity of the skin for the elimination of urea in health and that the excretion of urea by the skin at once rises as soon as perspiration sets in and remains high as long as the skin acts

freely, to an extent sufficient to lessen distinctly the output of urea in the urine.

Unwritten Laws and Ideals. Edited by E. H. PITCAIRN. London: Smith, Elder, and Co. 1899. Pp. 358. Price 7*s.* 6*d.*—The editor's idea in putting forth this book was, as he says in his preface, that if he could persuade representative men of various professions to set forth the unwritten laws by which those professions are governed and their ideals in regard to them, a useful and interesting book might be compiled. Mr. Pitcairn has succeeded both in persuading his representative men and in compiling the interesting book. The "professions" include the diplomatic service, the Houses of the legislature, the services, the divisions of the three faculties of divinity, law, and physic, vice-chancellors, schoolmasters and schoolboys, banking, music, art, and architecture. We naturally, as medical journalists, turned to the article dealing with our own profession which is written by Mr. Brudenell Carter. And a very excellent article it is both in matter and style, although on page 210 there is a curious slip in a date. The year in which the Royal College of Surgeons of England obtained its Charter sanctioning the creation of Fellows is given as 1884, whereas, of course, it should be 1843. But could there be any better summation of the ideals of the medical profession than these words on page 251? "The unwritten laws of the medical profession are to do as its members would be done by, to bring adequate skill and knowledge to the accomplishment of their work, to be true and just in all their dealings, and in the words of Sir James Paget, 'neither to neglect their duties for the sake of ease nor to abuse their opportunities for the sake of gain.' They ask in return that they themselves should be treated with justice and fairness." Of the other essays in the book it scarcely becomes us to speak critically, written as they are from a technical point of view by the several experts concerned, but we may make an exception as to the admirable essay upon the clergy written by the Rev. W. B. Trevelyan. The essay does not deal with theology, but mainly with the relations of the clergy to their own flocks and to those of other clergy. Now the medical profession and that of the clergy are alike in one way. The members of both are men to whom their fellows confide their most private sorrows. Both professions have to give advice upon the most intricate and delicate questions, both professions are bound by every moral law to keep the knowledge gained in the exercise of their calling as strictly confidential, and for the credit of humanity, be it said, such confidence is rarely if ever abused. But with all this both the clergy and the members of the medical profession are as a city set on a hill. Their actions are in the sight of all men and the sins of a black sheep in either flock are visited whether justly or unjustly upon all his fellows. The clergy may study with advantage Mr. Brudenell Carter's remarks upon the duty of one medical man to another, while section 5 of Mr. Trevelyan's essay will bring home to medical men, perhaps all the more as something written by one outside the medical profession and for members of another calling, their own duty to their brethren engaged in the arduous toil of everyday practice.

The Literary Year-book, 1900. Crown 8vo, 420 pages, cloth limp. Price 3*s.* 6*d.* London: George Allen.—The fourth issue of this useful little book, which is edited by Mr. Herbert Morrah, is divided into two distinct parts. The first deals historically and critically with the Literature of the Year 1899; the second provides a large amount of information arranged in a convenient form upon various matters of interest to all engaged in literature. Part I. includes a retrospective review of the literary events of the past year and a series of articles on the notable books of the year. These critical reviews are contributed by epresentative men of letters, and will all be found worth reading, though some of the writers, notably Mr. W. E. Henley, Mr. Joseph Jacobs, Mr. T. Herbert Warren (the President of Magdalen College, Oxford), Mr. A. T. Quiller-Couch, and Mr. G. W. E. Russell have been happier than the others. This division of the book also includes an article on the Book Sales of 1899, by Mr. Frank Rinder, which will be of great practical interest to systematic book-buyers, among whom many medical men may be found. Part II. contains, alphabetically arranged, a full list of authors with the names of their books published during 1899, the prices, and the publishers' names. It also contains alphabetical lists of illustrators of books with full particulars of books illustrated by them during the past year; lists of the books and plays published in 1899; and a great deal of trade and technical information upon printing, illustrating, royalties, &c. We recommend the book cordially to all our readers who require a compilation of this sort; it is careful, practical, and as far as possible complete.

New Inventions.

A TENT FOR THE OPEN-AIR TREATMENT OF TUBERCULOSIS.

MR. VICTOR H. NORMAN of Dene Side, Great Yarmouth, has submitted to us a small working model of a revolving tent for the open-air treatment of tuberculosis, originally constructed for the use of a patient under the care of a medical man in Norwich. A tent of the usual size for one patient has a rectangular wooden floor measuring five feet by six feet and supported on four small wheels, one near each corner; the floor is pivoted centrally on a circular wooden base of rather more than its own diameter, upon which it revolves freely by means of the wheels and can therefore be easily turned in any direction according to the position of the sun or the state of the weather. Dampness is completely avoided by the base being raised somewhat above the ground by wooden battens on the under side. The tent is covered on three sides and the top with light-green canvas (best Willesden rot-proof) made all in one piece and drawn over a four-sided wooden frame fitted together in a simple manner with ordinary screws. The top is flat and slopes from a height of six feet in front to a height of five feet six inches at the back. The open front is provided with a moveable sun-blind. The price of a tent of the above dimensions is £7 10*s.* None of its parts are likely to get out of order and it is apparently well suited for its purpose. During windy weather it might require to be held by ropes and pegs in the usual way.

UNIVERSITY OF CAMBRIDGE.—The following degrees in medicine were conferred on March 15th:—*M.D.:* E. A. Peters, Caius. *M.B.:* H. N. Clarke, Trinity; J. A. Nixon, and W. Tyson, Caius. *M.B. and B.C.:* F. T. Talbot, King's. Dr. H. K. Anderson and Mr. W. B. Hardy have been appointed Demonstrators in Physiology.—The new arrangement establishing a formal connexion between the University and Addenbrooke's Hospital was ratified by the Senate on March 15th and by the Court of Governors on March 19th. It will come into force without further delay.

ROYAL HOSPITAL FOR WOMEN AND CHILDREN, BRISTOL.—The annual meeting of governors and others interested in this institution was held on March 17th under the presidency of the high sheriff (Mr. G. A. Wills). The medical report stated that the out-patients numbered 4978 and that 690 children and 45 women were admitted during the year. 443 dental cases had been attended to. The financial statement showed that the ordinary expenditure of the year amounted to £4422 and the ordinary income was £3657, leaving a deficiency of £765. The past year commenced with an adverse balance of £2811, towards which £889 had been received by special donations, and £1200 had been transferred from the legacies account, so that at present there is a total deficit of £1487.

THE LANCET.

LONDON: SATURDAY, MARCH 31, 1900.

THE history of the surgery of the stomach resembles that of the surgery of many other important organs of the body: it is a record of gradual progress from the slightest surgical interference to operations of the greatest magnitude and severity, even to extensive resection. Time was when the most that a surgeon dared to do was to make an opening into a healthy stomach to remove a foreign body, or perhaps he might be induced to make a permanent aperture into the stomach in a case of malignant stricture of the œsophagus. The results, however, were hardly such as to encourage surgical treatment, for the mortality was exceedingly heavy. This was attributable in part to sepsis, but in no small degree it was due in the case of the operation of gastrostomy to a very natural reluctance on the part of physicians to call in surgical aid until the patient was almost dead from exhaustion. Naturally the results in such cases were nearly uniformly bad, and the delay in operation tended thus to increase the hesitation to permit any operation to be performed. Professor MAYO ROBSON has recently delivered three Hunterian Lectures at the Royal College of Surgeons of England on the most interesting subject of the surgery of the stomach, and the concluding lecture of the series appeared in the issue of THE LANCET of March 24th. From these lectures we learn the present state of the surgical treatment of the disorders of this organ. Large portions of the stomach may be excised, or even the whole may be removed, with no very great mortality, and in successful cases with wonderfully little effect on the patient's digestion. The stomach hardly occupies in our present opinion so important a place in digestion as it formerly held. We know that it is rather a preparer for the exercise of the digestive powers of the pancreas than an active digestive agent itself and that one of its functions is to render innocuous many of the micro-organisms which enter with the food. So that we can understand to some extent the small amount of interference with digestion produced by even considerable resections of the stomach. There are, moreover, many morbid gastric conditions, not due to the presence of malignant growths, in which drugs and dieting are of no avail and the patient, being unable to eat and unable to work, sinks into a condition of valetudinarianism. We now know that many of these cases are due to a definite lesion, such as an adhesion of the stomach to a neighbouring organ, or to cicatricial narrowing of the pyloric orifice by which the egress of the food from the stomach is prevented, or an "hour-glass" condition may be present in which the organ is constricted in the middle, so that it consists of two distinct loculi connected by a narrow channel. In all these conditions medicinal treatment is almost useless, and though extreme care in the quantity and quality of the food taken may suffice to keep the patient alive, yet his very existence is to him a perpetual burden. In no operation, it may fairly be said, is the beneficial effect of surgery more strikingly shown. By the division of the restraining adhesions the stomach is enabled to carry on its muscular movements unhindered; by enlarging the narrowed pylorus by the Heineke-Mikulicz operation of pyloroplasty, or by performing some one of the many varieties of gastro-enterostomy the surgeon enables the dilated stomach to empty itself of its accumulated contents and the distressful vomiting ceases at once. When the hour-glass contraction is present the two cavities into which the stomach is divided are made to communicate freely and all the untoward symptoms disappear. But that is not all; in every one of these cases wasting has occurred, often to an alarming extent; the process may have been long and the emaciation gradual, but ultimately the patient has become reduced to a mere shadow of his former self. After the operation, should it prove successful, all is changed, a steady gain in weight follows, and cases have even been recorded in which the weight of the patient has doubled. Many of these cases to which we have referred are caused by the healing of former ulcers, but surgery is also of value in some cases in which the simple gastric ulcer is still present. In such as these, it is hardly needful to say, medicine can do much, but in many instances surgery can do more. The milder cases of ulcer will heal readily under medicinal treatment with care in dieting. They do not require any surgical interference, but if the ulcer should prove intractable, should it extend in area and especially in depth, or, lastly, should perforation of the gastric wall occur, then the aid of the surgeon must be invoked. For the chronic ulcer a gastro-enterostomy may be performed, and by the rest which the stomach gains the ulcer is enabled to heal. In cases of perforation, except when previously formed adhesions limit the effused gastric contents, recovery without an operation cannot occur. Valuable time may be lost in the administration of opium and the application of fomentations, for the statistics in Professor MAYO ROBSON'S lectures clearly show that the mortality after operation for perforation of the stomach depends in great part on the interval that elapses between the occurrence of the perforation and the operation, though the condition of the stomach as to fulness has also much to do with the result.

For cases of hæmorrhage from the gastric wall surgery is only of distinct value in the less acute forms, but in these the results hitherto attained fully justify recourse to surgical treatment in some cases.

There are certain cases also of non-obstructive dilatation of the stomach which are amenable to operation. Whether etiologically these are all truly non-obstructive is a point which we need not now consider. For the most part these cases respond more or less readily to systematic and regular lavage, careful dieting, and general medical treatment; but in some instances the dilatation refuses to subside, and in these it is quite admissible to attempt to remedy the condition by surgical means. Various methods have been devised since BIRCHER in 1890 performed the first operation, but they are all based on the same principle. The ingenious expedient is adopted of diminishing the capacity of the

dilated stomach by making tucks of one kind or another in its wall. The operation is comparatively easy and attended with but little risk, for of the 28 cases in which according to Professor MAYO ROBSON'S statistics it has up to the present time been performed, in only two has a fatal result occurred, a mortality of a little over 7 per cent. It is hardly necessary to say that gastroplication, as the operation is named, is quite unsuited for any case in which the pylorus is constricted.

Surgical treatment is especially of value in those somewhat rare cases in which tetany and tetanoid spasms are associated with obstructive dilatation of the stomach. These spasms are probably the result of the absorption of a toxin from the dilated organ. In these cases the prognosis is very grave, three patients dying out of every four. The treatment which gives the best results is by a pyloroplasty or by a gastro-enterostomy to do away with the pyloric obstruction.

For injuries of the stomach a laparotomy is urgently required and it gives results as satisfactory as those following injuries of the intestine, though a certain number of recoveries have undoubtedly followed non-operative treatment, as in the case of ALEXIS ST. MARTIN, so highly appreciated by physiologists.

In malignant disease of the stomach the prognosis of surgical treatment is necessarily not so good as in the non-malignant affections, but in many of these cases, absolutely resistant as they are to medical treatment, much may be done. Pylorectomy and partial resection of the stomach are by no means dangerous operations in skilled hands. KOCHER has resected the pylorus in 57 cases and of these the immediate mortality was under 9 per cent.; in one case a woman was alive and well 10 years after the operation. In partial resection of the stomach the results are almost equally encouraging.

When the malignant growth is more extensive, so that practically the whole organ is involved, a complete or an almost complete gastrectomy is required. These are necessarily very severe operations and the mortality we might expect to be very great. In eight cases the whole stomach has been removed and of this number half the patients died. Of those who survived the operation two lived for many months in comparative comfort. In cases in which not quite the whole of the stomach but at least three-quarters have been removed the results are better, the mortality being under 30 per cent. With an earlier diagnosis and a greater readiness on the part of the patient to consent to operative measures we may look for better results, but operations of such magnitude will always have a relatively high death-rate. Professor MAYO ROBSON'S arguments as to the value of gastric surgery were supported by the recital of a number of cases which had occurred in his own practice; and the graphic descriptions of the improvement occurring in the general condition of many of the patients will go far to advocate the more extended practice of surgical treatment in obscure chronic cases of gastric disorder.

THE House of Commons recently went into Committee of Supply on the Army Estimates[1] when an important debate took place in connexion with the vote of £555,000 for the medical establishments. Several Members took part in it and their speeches elicited some interesting and noteworthy observations on the part of Mr. WYNDHAM, the Under-Secretary of State for War. The medical profession has every reason to be satisfied with the tone and spirit manifested on the occasion and with the eulogistic terms in which the services rendered by the Royal Army Medical Corps and by the civil consulting element during the present campaign were recognised. Dr. FARQUHARSON was able to declare that the Army Medical Service had not been made the subject of a single complaint throughout the war operations in South Africa and that the more they heard of what was going on at the front the more they were filled with admiration for the pluck, devotion, and skill which had been displayed and the hard work which had been successfully carried out by its officers. Dr. FARQUHARSON also very pertinently alluded to the inadequate numerical increase of medical officers which the Government were providing for the large permanent augmentation that was to be made to the strength of the army, and he remarked that as too much reliance could not be placed on the system of having recourse to the employment of civilians in times of war it would be necessary, under the longer and more expensive system of medical education now in force, to further level up the inducements to enter the medical service to those obtainable in civil life. Mr. PRICE said that the medical profession had done honour to itself and to the country during the war, and he added that he had the more pleasure in saying this because he had prognosticated an evil condition of things in connexion with the Army Medical Corps. Many Members spoke in a similarly eulogistic strain, while there were no dissentient voices to the proposition that the Royal Army Medical Corps had done admirable work.

Mr. ARNOLD-FORSTER and other speakers referred to the number of men who, having been medically examined in this country, were sent out to South Africa and, proving to be physically unfit for active service, had to be admitted into hospital instead of taking the field. We are afraid that there exists some ground for these complaints. But the fault does not lie with the Royal Army Medical Corps. This is a serious evil and largely an avoidable one. The presence of such men obviously entails a great deal of useless expense to the State, to say nothing of their being a source of trouble and embarrassment to all concerned. We have previously alluded to this unfortunate despatch of invalids to the seat of war, and believe it to be attributable to the fact that the Army Medical Staff being almost entirely in South Africa the medical examinations had to be undertaken by civil members of the profession who were not only new to the work, but under the circumstances of the case were probably often compelled to perform it in a hasty and perfunctory way. This may afford an explanation; it cannot, however, be urged as a valid excuse for the occurrence.

Mr. WYNDHAM, in the course of his reply summing up the various points raised in the debate, adopted a frank and encouraging tone. He declared that the House could not pay too high a tribute to the fortitude, courage, and efficiency which the medical officers had

[1] THE LANCET, March 24th, p. 894

displayed in the field. The medical schools in supplying candidates had fulfilled their part of the bargain, to which the Government was the other party in allocating military rank. The result had been, he hoped, satisfactory to them as it had been to the Army; but the Medical Department did not reap the whole results of such a change in the first or second year. Touching the point that had been raised that the present numbers of the Royal Army Medical Corps were not adequate to the size of the Army they might expect that the inducements which had been offered would, in the course of the next few years, give them numbers even more satisfactory than those which had been forthcoming recently. It would be impossible to keep up at all times an establishment of the Royal Army Medical Corps which would be adequate to a time when we were mobilising the whole of the Army for an expedition. He explained the action taken by the Government in the appointment of hospital surgeons as consultants at the seat of war, and paid a handsome tribute, which was well received in the House, to the valuable services which they had rendered. He also dwelt upon the enormous progress that had been made by the Royal Army Medical Corps in the sanitation of camps and sanitary work generally, as evidenced by the fact that the percentage of sickness in the present expedition had been the lowest shown in the records of this or any other country. We feel that when the present war has come to an end and South Africa has become settled the time will have arrived for harvesting all the results of our experience and subjecting them to very deliberate consideration, sifting, and analysis. The ultimate outcome will probably be some broad and comprehensive scheme for the welding and unification of all our military forces into a national army in which the reorganisation of all the medical branches of the service must occupy a prominent place. The war in South Africa has proved one thing, if it has proved nothing else—the enormous importance of having a really efficient medical service in time of war.

IN THE LANCET of March 17th (p. 785), in commenting on the work accomplished by the Medical Defence Union during 1899, we took the opportunity of making some remarks on medical defence in general and on the importance of organisations of this character to every member of the medical profession. The report issued by the London and Counties Medical Protection Society further shows the advantages which are enjoyed by practitioners who happen to be members of such a society when unfounded charges of negligent or unskilful treatment are brought against them or when their professional position is assailed by slanderous reports. It is needless for us to repeat the observations on the principles of medical defence which we have made in recent articles, but the report of the council of the London and Counties Medical Protection Society draws attention to another branch of work which occupies a large amount of the time and energy ungrudgingly given by the members of the council of that society in pursuance of their duties—namely, the attempts which they have made to assist in suppressing illegal practice. The council reported to the General Medical Council several cases of alleged "infamous conduct" on the part of professional men. Before reporting such cases the council made most careful inquiry into the justice and validity of the complaints which had been submitted to them. Of the cases thus reported some did not go beyond the Penal Cases Committee, although supported by sworn statutory declarations which appeared to prove conduct usually deemed "infamous" in a professional respect, not merely by medical men generally but by the General Medical Council itself. The grounds on which these cases were refused a hearing by the General Medical Council were not explained to the council of the Medical Protection Society and the members of the latter body naturally are aggrieved at such an omission. We can certainly sympathise with the feeling which prompted the following passage in the report now under consideration: "And your council feel bound to further express their opinion that the existing arrangements of the General Medical Council do not deal adequately with matters of this sort which affect not only the interests of the medical profession but also those of the public at large." The penal powers possessed by the General Medical Council undoubtedly exercise a wholesome influence in maintaining the honour of the medical profession. The Penal Cases Committee probably had good reasons for not prosecuting in the cases above referred to, but we should have thought that those reasons might have been explained to the council of a society one of whose functions it is to bring to the notice of the General Medical Council cases which have already been carefully investigated. The proceedings of the Penal Cases Committee are of course, strictly confidential and should be carefully guarded, but so also are the meetings of the council of the London and Counties Medical Protection Society. This society and others founded for similar purposes are doing excellent work, and it is to be regretted that their efforts on behalf of the profession should be met by the General Medical Council in a half-hearted manner. To comment on other matters dealt with in this report would be to repeat much that we have previously said on matters concerning medical defence. But we notice the significant fact, to which we have before alluded, that, as a rule, when a member is annoyed by slanderous reports a simple communication from the society to the offenders has been sufficient to exact an ample apology and to terminate the matter in a manner satisfactory to the member concerned.

Annotations.

"Ne quid nimis."

COUNTY MEDICAL OFFICERS OF HEALTH.

THE education of local authorities by means of affording them the option of exercising or not exercising certain powers is, as far at any rate as public health legislation is concerned, a somewhat tedious process, and, if we may take the Notification Act as a fair example, we learn that after over a decade of option the country is ripe for compulsion. The Local Government Act of 1888 placed within the power of county councils the right of electing a medical officer of health, who should devote his whole time to the duties of his office, and it was doubtless thought by the promoters of

the Bill that local authorities of the dignity of county councils would speedily avail themselves of their powers in this respect and appoint highly-qualified and experienced medical officers of health as their advisers. But it has to be admitted that the county councils, in what may be termed their public health aspects, have not realised the great expectations entertained as to them. Truly, there are certain counties which have set good examples—such, for instance, as the West Riding of Yorkshire, Lancashire, Essex, Cheshire, Worcestershire, Surrey, Derbyshire, Staffordshire, and Glamorganshire; but with a few additional exceptions the remaining counties which have, in a sense, taken advantage of their powers have done so in an apologetic, economical, and unsatisfactory fashion. In some cases their action assumes the shape of paying a medical officer of health an honorarium for collecting the reports of the local medical officers of health; in others a sort of retaining fee is paid, while any advice or action is paid for separately; and in others, again, the honorarium is intended to cover apparently all the advice which the medical officer of health is capable of giving. As an excellent example of this latter type we may take the East Sussex County Council, which is now advertising for no less a personage than a *consulting* medical officer. The duties of this office are to be multifarious. He is to prepare a digest of, and tabulate, the local medical officers' reports, to attend the meetings of the sanitary committee and any sub-committee thereof, and to advise and report to them on all matters relating to the exercise of the duties and powers of the county council and its sanitary committee under the several Acts through which county councils now obtain their sanitary powers. For all this work and all this expert advice the fortunate gentleman who is selected is to receive an honorarium of 100 guineas and travelling expenses and the appointment is to extend over a period of *one* year. But we must give the sanitary committee of the county council the credit which is due to them. This committee had passed by a large majority a proposal to elect, what we prefer to term, a statutory medical officer of health—i.e., one who in the terms of the Act "shall not hold any other appointment or engage in private practice without express written consent of the council," and the committee proposed a salary of £700 per annum. Clearly the sanitary committee saw the necessities of the situation and it is to be much regretted that the county council did not endorse their recommendation. County councils in their public health aspects are still on their trial, and it is not by appointments such as East Sussex now proposes to make that the confidence of local authorities will be won. A county medical officer of health should be thoroughly intimate, not only with his district, but also, as far as possible, with the local authorities within its limits. Only by a sound knowledge of the circumstances of each district council can he hope to advise the county council properly or to carry due weight in the county. The local medical officers of health will not improbably resent this sort of appointment, especially if, as is not unlikely, an inexperienced officer is appointed. If appointments of this nature are permitted questions will arise as to whether an amending Act should not be introduced into Parliament to render proper appointments compulsory.

THE UNIVERSITY OF LONDON ACT, 1898.

IN addition to the statutes made for the University of London by the Commissioners, of which we recently gave a summary in THE LANCET,[1] a copy of regulations has now been presented to the Houses of Parliament and ordered to be printed. These regulations define the boards of studies, 32 in number, the names of the teachers of the University who shall be recognised at the various teaching institutions, and the members of the respective faculties. The teachers at the London medical schools in anatomy, physiology, chemistry, biology, and physics are only provisionally recognised until such time as the Senate may make arrangements to secure common courses of instruction for internal medical students in such subjects at one or more centres. These lists are sure to attract much attention from the numerous teachers in the educational institutions included under the Act. A separate series of regulations is also included, setting out the terms under which a student of the University may obtain the degree of Bachelor of Science as the results of any research which he submits to the Senate. Such students, if successful, will be placed in a separate division, and will be adjudicated on apparently by the appropriate board or boards of studies dealing with the subject.

[1] THE LANCET, Feb. 24th, 1900, p. 558.

JUDICIAL WARNINGS.

WITH the recent vituperative attack upon a judge of the High Court in the *Birmingham Daily Argus* and with the subsequent proceedings against those responsible for it we should be little concerned but for the fact that Mr. Justice Darling, both on the occasion referred to by the *Argus* and on another occasion during the same assize, made reference to the part which may be played by an unscrupulous section of the press with reference to quackery of a particular class. We have already alluded to the case of Wells,[1] with regard to which his lordship cautioned the press not to make too full reports of the proceedings under any mistaken impression that indecent matter published in the form of a report of legal proceedings was entitled to any special privilege. Wells was awarded 12 months' imprisonment in respect of pamphlets and lectures treating of questions of sex and sexual intercourse, and it is always possible that such matter may be reproduced and the excuse made that it is of public interest and the subject of controversy. The other case at Birmingham to which we have referred was a civil trial for breach of promise of marriage in the course of which it was proved that the plaintiff had been seduced by the defendant and on becoming pregnant had been made ill by mixtures which he had caused her to purchase and to take with a view to procure abortion. These mixtures the defendant had been tempted to purchase by advertisements in the local newspapers, one of which, apparently produced in court, he showed to the plaintiff when he urged her to make use of the concoction offered for sale. A bottle of this stuff was shown to his lordship, who called attention to the similarity of the inscription on the bottle to one of the documents in the Frain case which he tried at the Old Bailey. It was one of those specious notices to which we called attention long before the Frain trial to the effect that the mixture, though harmless, must not be taken for any illegal purpose. Mr. Justice Darling further called the attention of the police to his intimation at the Old Bailey that newspapers publishing quacks' advertisements of abortifacients are liable to prosecution and ought to be prosecuted. In both of these recent instances and in his warning uttered at the conclusion of the Frain trial his lordship may have gone beyond the strict scope of the case immediately before him, but we fail to see that he thereby exceeded his duty as a judge of assize. Some newspapers pander to the tastes of their readers by publishing details of trials that can only appeal to the prurient without serving any useful object. Mr. Justice Darling warned these in order that they might not thereafter say that they had erred unwittingly. A still greater number have published, and

[1] THE LANCET, March 24th, 1900, p. 869.

many still publish, the advertisements of persons who either in fact sell, or fraudulently pretend to sell, dangerous drugs for illegal purposes, while the police make no effort to stamp out the advertisements and the trade which they enable to exist. Mr. Justice Darling uttered both his recent warnings in Birmingham, the town in which T. Ottey, one of the worst of the advertisers to whom we drew attention in our series of articles on the subject, has long traded, while newspapers in the Midlands and elsewhere have circulated his advertisements. In these circumstances Mr. Justice Darling's utterances appear to us to be neither uncalled-for nor ill-timed. They had no reference to respectable newspapers, and there was no need for any respectable newspaper to apply them to itself or to feel aggrieved, either in the case dealt with by the *Argus* article or in that of the advertisements of cures for "obstructions."

A TRIBUTE TO SIR MICHAEL FOSTER.

SIR MICHAEL FOSTER'S election to the great council of the nation has been made the occasion of a graceful tribute being paid to him by some of his old Cambridge pupils. It was in its inception purely of a private nature and took the form of a letter signed by, amongst others, Francis Darwin, W. H. Gaskell, L. E. Shore, H. Marshall Ward, A. C. Haddon, and Walter Heape, and expressed "the loyalty, respect, and cordial friendship" of the signatories. They say that they can ill afford to lose either the weight of Sir Michael Foster's name or his guidance at their councils and they can hardly imagine a greater misfortune than the breaking of the bond between him and themselves. "But," they continue, "we rejoice that an arrangement has been arrived at which will allow your interests still to centre in Cambridge, giving you at the same time the opportunity of working in a wider field, where you may do for England what you have already done for Cambridge and where your services to learning may benefit not only England but the whole English-speaking race." Sir Michael Foster has won fame and honours in foreign countries as well as in his own land, but few things, we imagine, will have pleased him more than this simple and spontaneous proof of the esteem and affection in which he is held by those whom he has trained. The work of a teacher is always hard and ofttimes disappointing, but there can be no greater pleasure to a teacher than to know that his efforts are appreciated and bring forth such fruit as he would desire.

GUARDIANS AND VACCINATION.

WHEN last year the Leicester guardians refused to carry out the law by appointing a vaccination officer there were other districts in the Midlands containing a large number of consistent opponents of vaccination which had, like Leicester, returned guardians to office practically pledged to withstand and render nugatory the Vaccination Act. In more than one of these cases as well as in that of Leicester legal proceedings were commenced by the Local Government Board with a view to compel the appointment of a vaccination officer, and in the districts where this happened the proceedings against the Leicester guardians, which culminated in their committal for contempt of court and ultimate surrender, were naturally watched with interest. In such circumstances as these it was borne in upon the guardians of Wellingborough, among others, that to disregard the order of the court was, as we expressed it at the time, as ineffectual a manner of resisting the operation of an Act of Parliament as to try to stop a steam-roller by sitting down before it and making faces. Accordingly when the Leicester guardians acknowledged defeat the Wellingborough guardians ceased to court it, complying with the law without further compulsion being exercised upon them. In preparing for resistance, however, they had apparently incurred law expenses to the extent of £43 10*s.*; and this sum they put down in their account to be paid out of the funds of their district, should it be passed by the auditor to whom the accounts had to be in due course submitted. This gentleman very properly refused to do anything but surcharge it to the persons responsible for its expenditure, holding an adjourned audit to allow them to protest should they choose to do so. A Mr. Abbott appears to have said at the adjourned audit that at the request of his constituents he had given a pledge to do all he could to make the Act a dead letter and to prevent prosecutions for non-compliance with it. A number of Mr. Abbott's colleagues were equally candid in the avowal of their intentions and motives, and the auditor can hardly have felt any hesitation as to the course which it was his duty to adopt. He accordingly surcharged those who were present when the cheque for the amount under discussion was signed and who had taken part in the affair throughout. It will be observed that no pretence was made to assert any obscurity of the law or to claim that the legal expenses had been incurred in order to assert or defend any right genuinely believed to exist, and it may be pointed out that although the auditor disallowed the charge in his own discretion had he failed to do so any ratepayer might have appeared and objected to it. Presumably other auditors have done the same in similar cases; should they not have done so it is to be hoped that ratepayers will call attention to the burden of fruitless litigation improperly cast upon the rates.

"IS INSANITY INCREASING?"

A PAPER was read at the Manchester Statistical Society on March 14th by Dr. J. M. Rhodes, who was for some years the chairman of the Chorlton Board of Guardians and is now the chairman of the Chorlton and Manchester Joint Asylums Committee, with the title, "Is insanity increasing?". Dr. Rhodes pointed out that according to the fifty-third annual report of the Commissioners in Lunacy the total number of lunatics in England and Wales on Jan. 1st, 1899, was 105,086, being an increase in a year of 3114, "the largest annual increase yet recorded." But we are not alone. "In France the last decennial return shows that the ratio of certified insane has increased from 247 to 252" and the ratio of persons admitted with *folie alcoholique* has increased in the 10 years by fully 100 per cent. Germany also gives the large increase of 6000 in 10 years. Denmark has a much lower ratio than other European countries, but it has risen from 137·3 to 165·7 per 100,000 during the same period, the greatest increase being in Copenhagen where the cases are one in 300 against one in 400 for the rest of the country. The increase in Belgium is large and steady, and the statistics are remarkable as showing the great preponderance of unmarried cases, 7600 of the total being single and only 2300 married or widowed. In England the married or widowed exceed the single, the numbers being 10,272 married to 7744 single. Italy also shows an increase of 24 per cent. in four years, and as in Belgium the unmarried exceed the married insane, in the former nearly in the proportion of two to one. In the United States during the two decades from 1860 to 1880 the insane increased in number by nearly 400 per cent., but the rate of increase in the last decade was not so great. From the varying legal enactments dealing with the treatment of lunacy in different countries, however, it is difficult to make safe comparisons. From statistics given by Dr. Rhodes it would appear that some insanity is part of the price of civilisation, and it seems also that the standard of the civilisation of a country can be gauged by the provision it makes for the insane.

In countries where education is low little is done for this class as compared with those where it is high. Until our own time only the violent and dangerous cases were found in the asylums, while now more than 50 per cent. are patients suffering from harmless dementia and melancholia. This fact accounts for a large increase in the number now cared for in our asylums. In Lancashire the accommodation is utterly inadequate to meet the demand, and the same holds good all over the country. Dr. Rhodes considers that "we need a thorough inquiry into the lunacy laws and their administration, and that better provision is urgently needed for the middle classes." In many cases the clerk, the warehouseman, or the skilled workman would be very glad to pay something for a relative as a private patient, but the county asylums are so full that they have only room for pauper patients, so that they must go as paupers or not at all as the charges elsewhere are beyond their means. There is great need for classification, and Dr. Rhodes thinks that some of the existing defects might be met by the "colony" plan of building asylums. The increase in Lancashire is confined to three classes—"working in handicrafts," "domestic," and "miscellaneous"—and the last class alone accounts for an increase of 2138 cases. Dr. Rhodes also thinks the increase is not nearly so great as the figures would indicate. "Public opinion in regard to insanity has changed. The insane are looked upon as requiring humane and scientific treatment by methods which can be better carried out in asylums than in the homes of the patients." During the discussion that followed the paper the chairman of the Manchester Board of Guardians pointed out that the number of the inmates of the asylums was kept up by the prolongation of life from the care and attention which they received. Some of the patients were 80 or 90 years of age.

THE WEST AFRICAN FRONTIER FORCE.

THE general medical history of this force until March 31st, 1899, is given in a report just issued by the Colonial Office. Dr. Wordsworth Poole, the principal medical officer, states that the first detachment of the force landed in Africa in September, 1897, and by the end of March, 1898, new arrivals had made up the two battalions to their full complement. The majority of the places where the force was stationed were on the banks of the river Niger. The medical staff consisted of eight medical officers (civilians), three nursing sisters (civilians), and 14 non-commissioned officers of the Royal Army Medical Corps. From April 1st, 1898, to March 31st, 1899, the average strength of the force was 156, of whom 27 died in Africa and 55 were invalided to England. Of the 55 thus invalided five died either on the passage or very soon after arrival in England. So that 32 deaths may be ascribed to the effects of service, being a death-rate of 20·5 per cent. per annum. The causes of the 27 deaths in Africa were as follows: malarial fever, 12; blackwater fever, 6; abscess of liver, 3; dysentery, 2; killed in action, 2; drowning, 1; and sunstroke, 1. The causes of invaliding to England were as follows: blackwater fever, 20; debility, 14; malaria, 6; dysentery and syphilis, 5 each; epididymitis, abscess of liver, hæmoptysis, rheumatism, and beri-beri, 1 each. The total number of admissions to hospital in Africa for all diseases was 950, which with an average strength of 156 gives an average of six admissions to hospital for each man during the 12 months. A few of these admissions were as follows: malarial fever, 734; blackwater fever, 36; diarrhœa, 37; dysentery, 19; and sunstroke, 4. An extensive trial was made of the use of quinine as a preventive of malaria. More than half the number of Europeans took five grains of quinine every day during the whole period they were in the country. Others took a dose of 15 grains once a week. A few took no quinine. Careful records were kept for a period of six months of the amount of fever occurring in the members of these three classes. The results, however, of the experiment did not afford the basis of a conclusive opinion.

THE EASTER HOLIDAYS EXTENSION.

A MOVEMENT now on foot for the extension of the Easter holiday is certain to obtain a large amount of public sympathy. The position of the Saturday before Easter is in the case of very many persons nothing less than a grievance. But for it an unbroken period of four days would be available for that change to country air and recreation which every dweller in a great city has found reason to value highly. Unfortunately the total cessation of business for even so short a time is prohibited in some trades by the daily needs of our existence. It is quite otherwise with the work which is carried on in most of the larger warehouses and shops which are not engaged in the provision trades. An increasing number of these latter, we are pleased to find, are disposed to concede the whole of Saturday to their employés. They may well do this, for the amount of business done on this day—or, as it should be better styled, half day—is not great. On the other hand the gain in point of health both to employers and employed which the cessation of work between Thursday and Tuesday implies is considerable.

HEAT-STROKE AND SUN-STROKE.

IN an article which occupies considerably more than half of the *Archives de Médecine Navale* for January Dr. Moussoir, a French naval surgeon of the first class, claims to be the first observer to have established a fundamental distinction between heat-stroke and sun-stroke, and contends further that a correct appreciation of his discovery would result in a large saving of human life. "I bring here," he says in his opening sentence, "the solution of a problem which has never been resolved in a satisfactory manner"; and a little lower down he expresses his conviction that "the originality of the etiological theory, the prophylaxis arising therefrom, and the proposed pharmaceutical treatment justify the publication" of views that would have seen the light three years sooner but that he was compelled by the exigencies of service to spend the greater part of his time in transferring his household gods from one station to another, including Tonkin and Bac-Ninh. Heat-stroke, according to Dr. Moussoir, is a pathological condition produced by the action on the whole surface of the body during a sufficiently prolonged period of a temperature exceeding 104° F., whereas sun-stroke is a pathological condition produced by the action on the cranium during a period, which need not necessarily be long, of sufficiently intense solar radiation. The high temperature which gives rise to heat-stroke may be either moist or dry and may emanate from any source. Moist heat, as in a stoke-hole on board ship, brings on heat-stroke by preventing the evaporation of perspiration, while a dry heat, by shrivelling up the skin into a parchment-like substance, prevents the exudation of perspiration, and most probably also produces an analogous condition in the pulmonary alveolar tissue. Heat-stroke causes its ill-effects through the superheated blood, which reacts on the nervous centres. It comes on gradually, but may simulate suddenness when the will power by which the subject was sustained is abruptly withdrawn. Stokers are able to endure a damp hot atmosphere in narrow, ill-ventilated spaces because they work naked or nearly so, whereas soldiers on duty in the open air succumb to heat-stroke because the caloric increases beneath their thick clothing, which also hinders the evaporation of sweat. To prove this three thermometers should be placed—the first in the shade, the second in the sun, and the third likewise in the sun but wrapped in a piece of cloth. An

experiment frequently repeated by Dr. Moussoir gave results as follows: first thermometer, 82·4°; second, 110·3°; and third, 127·4°. Sun-stroke, or insolation, is not induced by high temperature but by the intense radiation which the sun alone, owing to its enormous volume (1,200,000 times that of the earth), can supply, the chemical rays, the vibrations of which are more rapid and therefore more penetrating than those of their calorific and luminous congeners, being the exciting cause. Fonssagrives and Corre imagined that the sun-stroke of low temperature during clear weather was due to the action of light on the retina, but this must be an error because, owing to the incautious exposure which is then likely to take place, the affection is very frequently met with while the sky is overcast. The chemical rays emitted by the sun can pierce through white clouds freely, but are almost entirely arrested by black substances and partially so by red. These facts explain the immunity from sun-stroke of negroes and people with swarthy complexions and the diminished liability to it of the ruddy. To produce sun-stroke the rays must impinge upon some part of the brain-case, the effect being transmitted thence to the as yet unlocated heat centre by reflex action. The process precisely resembles what goes on when a perspiring scalp is exposed to a draught and sneezing coryza and other reflex phenomena quickly ensue. Covering the head preserves from sun-stroke, but just as is the case with thick clothing a helmet can only assist in the development of heat-stroke. The mean of a series of observations with suspended thermometers showed that the temperature inside a regulation helmet was 10° C. higher than in the shade of a verandah. In heat-stroke the disease begins by heating the blood, but in sun-stroke this condition of the circulating fluid is secondary; the fact, however, that in both affections the blood becomes superheated serves to explain the resemblance of the symptoms. Sun-stroke or insolation can only occur within the tropics because in that region alone the sun's chemical rays are sufficiently intense to produce the necessary reaction. In support of this statement Dr. Moussoir appends a number of ingenious diagrams dealing with the refraction of solar rays, but these aids to comprehension require to be seen while the accompanying lucid letterpress should be read *in extenso*. So far Dr. Moussoir may, perhaps, be held to have supplied a *primâ facie* case in support of his somewhat ambitious exordium, but with regard to treatment his promises can scarcely be looked upon as fulfilled. Excitation and antipyrin are insisted upon, together with ice, cold affusion, and the rest of the stock remedies as usually recommended. Quinine, however, is discarded utterly, the writer having no belief in its anti-thermic properties, seeing that in small-pox, scarlet fever, &c., its exhibition fails to reduce the temperature. In paludal fevers the alkaloid acts as a parasiticide, and in sun-stroke there are happily no microbes. Incidentally painting with guaiacol is mentioned, but the effects are said to be prohibitively uncertain. Under its influence hyperthermia is apt to degenerate into hypothermia with cardiac collapse. Among the predisposing causes of heat apoplexy Dr. Moussoir mentions the horizontal position, contending that the heat rays, both direct and refracted from the ground, have thus a much larger surface to act on. This would seem to supply an argument against the Indian practice of taking a siesta during the heat of the day.

ROYAL METEOROLOGICAL SOCIETY: A JUBILEE CELEBRATION.

THE Royal Meteorological Society will attain its jubilee on Tuesday next, April 3rd, having been founded on April 3rd, 1850, and arrangements have been made for keeping the anniversary with due observation. At a commemoration meeting to be held in the Institution of Civil Engineers, Great George-street, Westminster, at 3.30 P.M., the President, Dr. C. Theodore Williams, will deliver an address, and the delegates from other societies will be received. A conversazione will follow at the Royal Institute of Painters in Water Colours, Piccadilly, at 8.30 P.M. In addition to the pictures in the galleries there will also be an exhibition of meteorological instruments, models, and photographs, and lantern demonstrations will be given by Colonel H. M. Saunders, Mr. T. C. Porter of Eton, and Mr. W. Marriott. On the following day (Wednesday) there will be, by permission of the Astronomer Royal, an excursion to the Royal Observatory, Greenwich, and the commemoration meeting will close with a dinner at the Westminster Hotel at 7 P.M. As a memento of the jubilee of the society a bronze commemoration medal, bearing on the obverse a portrait of Mr. Luke Howard, F.R.S., has been struck.

THE MIDWIVES BILL: A MEETING OF PROTEST.

A MEETING of medical and lay constituents of the boroughs and divisions of South-East London and adjacent parts of Kent and Surrey to consider and adopt measures to resist the registration of midwives, and particularly the Bill now before Parliament, will be held at the Cannon-street Hotel, E.C., on Wednesday, April 4th, at 4 o'clock P.M., when the chair will be taken by Mr. George Brown. The following Members of Parliament for the boroughs and divisions comprised will be invited to meet the Direct Representatives of the profession on the General Medical Council:—Right Hon. C. T. Ritchie (Croydon), Lord Hugh Cecil (Greenwich), Sir J. Blundell Maple, Bart. (Dulwich), Colonel Edwin Hughes (Woolwich), Colonel P. H. Dalbiac (Camberwell, North), Captain Cecil Norton (Newington, West), Mr. A. H. A. Morton (Deptford), Mr. John Penn (Lewisham), Mr. H. W. Forster (Kent County, West), Mr. C. E. Tritton (Norwood), Mr. H. C. Leigh Bennett (Chertsey), Mr. James Bailey (Walworth), Mr. F. G. Banbury (Peckham), Mr. R. K. Causton (Southwark, West), Mr. J. C. Macdona (Rotherhithe), Mr. A. Lafone (Bermondsey), and Mr. F. L. Cook (Kennington).

UNUSUAL CASES OF INSOMNIA.

PROFESSOR H. OPPENHEIM of Berlin has contributed to the *Berliner Klinische Wochenschrift* (No. 49, 1899) a valuable clinical lecture devoted to some unusual cases of insomnia. Various types of insomnia exist requiring different methods of treatment. Thus, to the psychical or ideogenic type belong all cases in which mental worry and overstrain, violent emotions, morbid concepts, hallucinations and delusions, or other pathological mental states are the causes which prevent sleep. The insomnia of many lunatics and of patients suffering from grave hysteria and neurasthenia belongs to this category. Some patients suffer from interruptions of sleep owing to the appearance of certain "phobias" or terrifying and startling ideas which may occur while falling into sleep. Closely related to the psychical is that type in which a hyperæsthesia of the senses (hearing, tactile and cutaneous senses) interferes with sleep or renders it difficult. The second category includes types of insomnia due to pain (algogenic type). Apart from bodily pains of various sorts there may be disagreeable or irritating sensory disturbances which serve to promote insomnia—e.g., pruritus, thermoparæsthesia, excessive flushings and feelings of heat, and tinnitus aurium. Gastro-intestinal disturbances (colic and enteritis) play an important part and cardiac and respiratory disturbances also act prejudicially in driving away sleep. There is also an insomnia of sexual origin arising from various conditions which may disturb or unduly stimulate the sexual life. At times sleep

itself is a cause of troubles which interrupt and break it, thus dreams, night-terrors, and nightmares arise in the course of sleep, and when they have attained a sufficient intensity they produce wakefulness. Professor Oppenheim mentions two interesting cases, in one of which the patient, who was perfectly well in the waking state, was frequently awakened from sleep by the pain and discomfort of severe girdle-pains, while the other patient was subject to attacks of occipital neuralgia only during sleep. There are pains and disagreeable experiences which are intimately connected with sleep just as there are forms of epilepsy which only manifest themselves during sleep (nocturnal epilepsy). A case is also reported of a woman who had recovered from influenza with the following extraordinary result. As long as she was awake the heart's action and the respirations were normal, but as soon as she went to sleep they subsided to so slow and feeble a rate as practically to cease and she was in danger of dying. This state of affairs was so alarming that she had to be constantly watched and kept by artificial means from falling into sleep until by the administration of drugs (bromides and nerve tonics) the condition eventually passed away. Another case is recorded of a married woman, aged 35 years, who one day unexpectedly received bad news. She became excited and agitated by this and her sleep was disturbed by attacks of dyspnœa which came on at intervals of from 15 to 30 minutes all through the night. During these attacks she would start up unconsciously and on more than one occasion she sustained injuries by so doing. She was free from symptoms of hysteria. In about a minute after being thus awakened she would become conscious and would be able to answer questions and she could then go to sleep till interrupted again as before. Bromides were administered to this patient and she eventually recovered. The great importance of treating or averting insomnia and thereby of obviating threatened mental breakdown is urged by Professor Oppenheim as chiefly needed in all cases with hereditary tendencies to mental disease.

OBSERVATIONS ON TUBERCULOUS CATTLE IN CANADA.

A REPORT which has recently been issued by the Canadian Government embodies the details of a number of experiments which have been carried out by Dr. J. G. Adami of the McGill University and Dr. C. F. Martin on cattle recognised to be tuberculous by the tuberculin test. In November, 1897, 10 cows were received at the Government farm at Outremont from Ottawa. They had been tested with tuberculin and had all reacted, although only one displayed any clinical evidences by which the chief veterinary inspector (Professor McEachran) could suspect the disease. The 10 cows were placed each in a separate stall in a byre newly built for the purpose, the best attention possible being given to hygienic and dietetic arrangements. The partitions were of such a height (five feet) that there could be no contact between the animals, and each cow was allowed its own special exercising ground where it could not be approached by the others. In December seven of the subjects were re-tested but only two gave definite reactions. A month later (Jan. 15th, 1898) the whole 10 were again tested and three reacted; two of those which had reacted in December showed no rise of temperature now and the only reacting one of the previous seven was the cow which had exhibited clinical evidences of disease. The cows were not inoculated again until the end of April and the experiment was made with two of them to see whether repeated reactions could be obtained by giving increasingly large doses, as is known to be the case in the human subject. On April 28th double the usual dose was injected without effect; on May 2nd four times the proper amount was given without result. It would thus seem that in this respect tuberculin acts somewhat differently in cattle to the way in which it acts in human beings. Dr. Adami and Dr. Martin consider that very possibly these large injections had some curative effect as these two cows at death showed but a trace of tuberculosis. They draw attention to the opportunity which is presented by the knowledge of no reaction following if the animal has been recently tested for a vendor to get rid of a tuberculous animal as a sound one. This fact is well known to veterinarians in England, and it is customary to allow at least three weeks or a month to elapse before re-applying the test. Probably the most important fact of interest to the medical practitioner was ascertained by the examination of the milk for tubercle bacilli; these were clearly demonstrated in the milk of six of the cows, although the udders were apparently healthy both to external appearances and on subsequent post-mortem examination. The milks were examined at frequent intervals, sometimes with positive, sometimes with negative, results. At times the bacilli were present in considerable numbers and at other times there were very few in the field. Guinea-pigs, rabbits, and calves were fed or inoculated with milk from each of the cows, the results being carefully noted. The chief conclusions arrived at by Dr. Adami and Dr. Martin were:—1. Each of the cows which had reacted to tuberculin exhibited upon post-mortem examination seven months later distinct evidences of tuberculosis, although in no instance were the lesions very extensive. In no case did the most searching examination demonstrate tubercle in the mammary gland. 2. The first injection of tuberculin is capable of detecting the slightest degree of infection in cattle, but the injection seriously affects the development of another reaction within an average period of rather more than a month. A second reaction is often not obtained within 30 days, even by giving double, or four times, the dose of tuberculin. 3. It is possible that repeated doses of tuberculin have a certain curative power. 4. Although the udders were free from tuberculous disease the milk of several contained from time to time tubercle bacilli, the latter being demonstrated beyond dispute by the usual methods of staining and by inoculation experiments. 5. The milk of animals suffering from slight grades of tuberculosis possesses only feeble infective powers, although occasionally without obvious cause the number of bacilli present in it might increase greatly, and in one case the number suddenly became so great that the milk at this period must have been dangerous.

MEDICAL APPOINTMENTS IN EGYPT.

THE Quarantine Authority of Egypt is about to appoint after public competition one woman doctor to be attached to the department at Suez at a monthly salary of from 22 to 28 Egyptian pounds. Candidates for the post must submit: (1) the original or else a certified copy of their diploma as doctor; (2) a certificate of sound health; and (3) a formal pledge of their willingness to take up the duties of the post in case of their being nominated to it during the course of the month which follows that of the formal nomination. Candidates should also submit the languages which they know. They are also warned that in case they wish to resign the post they can only do so on giving three months' notice to the President of the Sanitary Council. The examination will close on April 30th, 1900. The quarantine authority is also about to appoint after public competition one director of the second class at a monthly salary of from 22 to 28 Egyptian pounds. Candidates must submit: (1) the original or else a certified copy of their diploma as doctor of medicine and surgery; (2) certificates of their having studied bacteriology and epidemiology; (3) a certificate of sound health; and (4) a formal pledge of their willingness to take up the duties of the post in case of their

being nominated to it during the course of the month which follows that of the formal nomination. Candidates must also submit their age and the languages which they know. They are also warned that in case they wish to resign the post they can only do so on giving three months' notice to the President of the Sanitary Council. The examination will close on April 30th, 1900. Applications for either of these appointments should be sent to Dr. C. Armand Ruffer, Alexandria, Egypt.

STREET NUISANCES.

WE are glad to see that the London County Council is persevering in its efforts to make London less objectionable. At the weekly meeting held on March 27th a recommendation of the General Purposes Committee was agreed to that a conference should be held with the various local authorities to consider the question of street and traffic regulation. All sorts of points are involved in this decision. The question of traffic alone involves the ever-increasing number of omnibuses which in narrow streets, as, for instance, Bond-street, are gradually getting to be a greater nuisance than convenience. Some check, too, should be placed upon the perpetual disturbance of the streets by gas, telephone, electric lighting, water, and hydraulic power companies from one or the other of which the Strand and adjacent streets have never been free since last July. Something should also be done to stop newspaper hawkers throwing away the innumerable posters which they carry—a practice which makes Piccadilly-circus a perfect rubbish shoot. "Mud Salad Market," as *Punch* long ago called the market owned by the Duke of Bedford, is, we suppose, a necessary evil, but all the same it is out of place in the midst of a great city.

THE MEDICAL GRADUATES' COLLEGE AND POLYCLINIC.

THE first annual general meeting of this institution was held on Wednesday last, March 28th, when Dr. C. Theodore Williams urged the members to put their shoulders to the wheel as Mr. Hutchinson had done and help to tide the college over a critical position. Dr. Williams, who is treasurer of the College, put the whole difficulty quite tersely when he said that they could not carry on the work with an income of £800 and an expenditure of £2000 a year. In the course of his remarks one of the audience said the State ought to help, to which Dr. Williams replied that from what they knew of the British Government he did not think that they would find any instance in which the Government had so helped, but the members could persuade their friends to give donations. Mr. Hutchinson said that they should remember the Hunterian maxim that organisation depended on life and not life on organisation. The life must come from within, and they all ought to be zealous to work to a grand success. At first they could not be wholly self-supporting and must appeal to the members at large to do what they could. The pecuniary liabilities of the College should not be entirely thrown on the medical profession. The paucity of general practitioners on the Council led Dr. Snape to say that as the members of the College were general practitioners and formed the audiences at the lectures and the students at the classes their support was essential to success, and adequate representation should be accorded to them on the council. Dr. Fletcher Little considered that if the College was to be a practitioners' College, as he hoped it would be, they must be properly represented on the council. Sir William Broadbent, the chairman of the council of the College, said that proper representation of the general practitioners on the council would be granted when that body was re-elected next year. We hope that the financial position of the College will soon be much improved, but we agree with Dr. Williams that salvation will come from self-help, and that no State assistance can be hoped for. This may be regrettable, but it is a fact.

THE SUPPLY OF MEDICAL STUDENTS.

THE General Medical Council has just issued its Medical Students Register, which is the list of medical students registered during the year 1899. There is an increase of 102 in the number registered in the United Kingdom in 1899 as compared with the number registered in the previous year, being 1711 and 1609 respectively. But taking the last two quinquennial periods into the estimate we find that the later, ending in 1899, gives 8441 registrations of medical students and the former 9340. In other words there are 899 fewer registrations in the later quinquennial period than in the former, or an annual average of about 177 less per year. The register contains much interesting information as to the schools and the date of commencement of medical education of the students registered, the division of the kingdom in which the registration takes place, the regulations of the General Medical Council for the examination and registration of medical students and other matters.

THE THREATENED EXCLUSION OF FOREIGN MEDICAL PRACTITIONERS FROM ITALY.

MUCH anxiety exists among foreign practitioners in the kingdom of Italy in respect of legislation said to be contemplated by the Italian Government to prevent all foreign medical men from practising in Italy unless they hold an Italian qualification or the country from which they come grants a reciprocal right to duly qualified Italian practitioners. We showed last week from an examination of the minutes of the Executive Committee of the General Medical Council that it is informed on this subject. But it is one calling for the serious attention of the Council in May. We cannot imagine that the friendly Italian Government will allow itself to act hastily in a matter so deeply affecting not only British medical men but also the British invalids who flock to Italy in thousands every winter. At the very least, they will surely not include in such legislation British practitioners already established in Italy. On our side there must be more decision and promptness or we shall provoke legislation that will be unfortunate and narrow. We must not forget that Italy is only proposing to do very much what we do already—with this difference, that Italians may practise here without any probability of objection on the part of the law or of the General Medical Council.

THOMSEN'S DISEASE (MYOTONIA CONGENITA) IN A BROTHER AND SISTER.

DR. J. S. RISIEN RUSSELL demonstrated at a meeting of the Neurological Society of London on March 15th two cases illustrating the heredity of Thomsen's disease, the patients being a Hebrew boy and girl. The children were apparently of natural development, not backward in speech or walking, and free from fits of any description. The boy, aged 15½ years, seemed somewhat poorly developed for his age. His growth appeared to have been natural until he was five years old, when a difficulty in performing voluntary muscular movements began to be noticed. His condition gradually grew worse. It was most marked in the morning and on attempting to get up or to walk the movements of the arms and legs were hampered by stiffness of the muscles. Gradually in the course of the day this stiffness diminished. Walking was always difficult, however, especially after a period of rest. On closing the eyelids tightly the patient could not readily

open them again and after closing the hand tightly the extension of the fingers was slow and difficult. The knee-jerks were normal and there was no spasticity. The girl was aged five and a half years and presented similar phenomena but in a less marked degree than did her brother. Her trouble seems to have commenced at the age of four years, and at the date of the demonstration (16 months after) it was more noticeable. In the four months during which she had been under observation the condition had grown worse.

THE PROGRESS OF THE MIDWIVES BILL.

THE Midwives Bill, having passed through the Standing Committee of the House of Commons on Law, now awaits the report stage. Throughout the proceedings of the Standing Committee the promoters of the Bill had affairs their own way despite the vigorous resistance offered by Mr. T. P. O'Connor and Mr. Lloyd George; while, as will be seen from our Parliamentary representative's account, the supporters of legislation evidenced their interest in the measure with as much clearness as the opponents displayed their apathy. In spite of the favourable position which the Bill now enjoys some modifications may be expected in response to the representations of the General Medical Council. The General Medical Council has strongly urged the inclusion of a clause not yet in the Bill requiring that in obstetric cases presenting "symptoms of difficulty, abnormality, danger, or disease on the part of the mother or of the new-born child" the licensed midwife must apply for qualified medical assistance. An amendment to this effect was brought before the Standing Committee by Colonel Milward, but was lost. The Council will, we are sure, use what pressure it can to ensure the addition of such a provision to the Bill before it becomes law. The Government are stated to consider that inasmuch as the rules of the Midwives Board have to be approved by the General Medical Council, the General Medical Council will have full opportunity after the Bill becomes an Act of restricting the practice of the licensed midwife to the limits of proper obstetric nursing. Under the measure which has just passed through the Standing Committee we believe verily that the licensed midwife can by no means be so restricted—a situation that will commend itself favourably to the limited intellect of Mr. Atherley Jones, Q.C.—but certainly the legal provisions making attempt to confine the new order of nurses to nursing should be an integral part of the Bill.

THE RESIGNATION OF SIR WILLIAM T. GAIRDNER.

WE announced last week the intention of Sir William Gairdner to intimate to his class in the University of Glasgow his decision to resign his professorship of the Practice of Physic. He did so on Friday, March 23rd, in eloquent terms of dignity and regret befitting the occasion. There was something exceedingly touching in the sentiments of Sir William Gairdner expressing the reluctance with which he took such a step while still feeling the keenest interest in the work of the class-room and the ward. "My class-room and my hospital remain now as they have all along been, the greatest of my occupations and the sources of the most profound satisfaction in endeavouring to serve thereby my day and generation." There is no abatement in the force with which Sir William Gairdner follows the development of medicine. It is on the contrary his deep sense of the rate and scale of this development which determines him to give way to one with "at least a younger pair of eyes and perhaps a younger brain as well." He will scarcely admit any age in the brain that should make him resign, but his eyesight is not equal to the task of the enormous amount of reading necessitated by his professorship and the claims of the new science of bacteriology. Sir William Gairdner's final words of acknowledgment to his "generations of pupils" and "succession of helpers in class and ward duty," will be cherished by men all over the world as well as by those gentlemen—Carslaw, Ness, and Watson—who close the great army of assistants and are fortunate enough to find their names associated with the work of such a master and specified in historical words. This is not the time, happily, to count up what Sir William Gairdner has done for the health of the inhabitants of Glasgow. This event of his resignation has an interest wherever medical science and medical character are prized. His *forte* as a teacher has been that he has always been a learner. He will, we hope, long continue to be both, and the profession at large will be glad to place itself *in statu pupillari* whenever he may choose to announce the results of his judgment and his experience.

OUR Birmingham correspondent, in a note in our issue of Jan. 27th, referring to the Anglo-American Assurance Company, introduced the name of Sir William MacCormac. We have been requested to give publicity to an entire repudiation by Sir William MacCormac of any connexion whatever with this company. We are sure that all our readers must have seen that the name of the President of the Royal College of Surgeons of England was unwarrantably used as a decoy by the convict who was canvassing the profession recently on behalf of this swindle.

THE annual meeting of the Factory Girls' Country Holiday Fund will be held on Friday, April 27th, at 3 o'clock, at the Mansion House, by permission of the Right Hon. the Lord Mayor. The Lord Mayor will take the chair, and among those announced to speak are the Bishop of Rochester, the Bishop of Bristol, Mrs. Scharlieb, M.D. Lond., and the Very Rev. Dr. Adler, Chief Rabbi.

DURING the absence abroad of Sir Savile Crossley Viscount Duncannon will undertake some of the duties of the honorary secretaries of the Prince of Wales's Hospital Fund for London. All communications to the Fund should, as before, be addressed to the honorary secretaries, Prince of Wales's Hospital Fund, Bank of England, London, E.C.

THE second Lees and Raper Memorial Lecture will be delivered by Mr. Victor Horsley in St. James's Hall, Piccadilly, W., on Friday, April 27th. The subject is announced as the Effect of Alcohol upon the Human Brain.

PROFESSOR OSLER has telegraphed from Baltimore asking us to announce that he is not a candidate for the Chair of Medicine in Edinburgh University.

THE WAR IN SOUTH AFRICA.

EVEN apart from the fact that nothing succeeds like success we think that a change of tone and of opinion may be traced in the foreign press in regard to the war in South Africa and the way in which it was brought about and has been conducted. With the arrival of fuller and more precise information as to what was the actual condition of affairs at the time when the war broke out it begins to be recognised in this country also that, speaking generally, our generals in South Africa did the best which they could under the circumstances and were, as a matter of fact, compelled to follow the course of action which they pursued. Unfortunately it was incorrectly assumed by the Government of this country—and the assumption was founded upon the views held by many local authorities in South Africa—that the force under Sir George White would be able to deal with any army which the Boers could bring against it. It was not foreseen, as it might have been, that the Boers would

invade Natal in force. Urgent political reasons also came into play, advanced posts were held, and the result was that the military authorities and Sir George White had no option but to occupy Ladysmith where the defending force was shut up for some months. Ladysmith was a big store depôt. It should never have been selected for that purpose, for it was a strategically unsuitable position, and in any case it should have been strengthened by defensive works and a proper armament, which it was not, when it was first fixed upon years ago. But neither Sir George White nor Sir Redvers Buller was responsible for this. They had to take things as they found them and make the best of them, which they undoubtedly did. We are glad to hear, by the way, that Sir George White, although still suffering from fever, is better; he has just left Cape-town for England. The siege of Ladysmith will add another page to our national history illustrative of fortitude, endurance, and bravery, but the glory of it has been purchased at the cost of a vast amount of sickness and suffering and also, we are afraid, at the expense of shattered health in many of the survivors.

There is a comparative lull in the news from the theatre of war at the present time. Taking stock of our losses it appears that up to March 24th the British casualties in South Africa in killed, wounded, missing, and prisoners (exclusive of sick) are returned as 1000 officers and 14,409 non-commissioned officers and men. The sick-rate in comparison with that of the killed and wounded has so far been exceptionally low. This no doubt is attributable to many causes, such as the healthy nature of the climate, the forethought, care, and preparation which have been exercised, the ample provision that has been made for the requirements of the campaign, and also to the attention that has been paid to camp hygiene. There does not seem to have been any wholesale contamination of water-courses (if we except the case of Ladysmith where the water was probably fouled and gave rise to much of the enteric fever and dysentery that prevailed there) such as occurred in some of our previous campaigns in South Africa. Still, there has been a good deal of enteric fever and dysentery, and these diseases have not by any means been confined to besieged garrisons. It is the nature of such diseases and of other diseases incidental to field service to spread as the campaign goes on. Happily the forces have been a good deal on the march and consequently have been changing their ground, which is about the best thing that could happen under the circumstances, and the invasion of the Transvaal and the march to Pretoria will take the army over tracks of comparatively virgin country. The chief source of anxiety at the moment is as to the relief of Mafeking, which, despite the pluck and the cheerful tone the little garrison have maintained throughout the siege, must be hard pressed and increasingly so. It is reported that the army medical service with General Buller's force has been more than usually active of late and that arrangements have been made for a considerable augmentation to the strength of the stretcher-bearers and dhoolie-bearers of the force; if so, we may shortly anticipate to hear news of a movement. Should General Buller have to advance along the route which now seems probable he will still be destined to encounter a most difficult line of country and one which is, topographically speaking, most favourable to Boer tactics. Be this as it may, his soldiers evidently have confidence in his generalship, for it is refreshing to read or hear of their testimony to his ability as a general and to his soldierly qualities. If his column has to force passes we may still expect some severe fighting and much occupation for its medical staff and sick transport. Lord Roberts and Lord Kitchener are presumably actively engaged in securing a safe base and lines of communication and in making their final arrangements for the march towards Pretoria. The war is not by any means over yet, but the course will, at any rate, soon be clear for attempting, and as we trust successfully, the carrying out of the definite strategical plans of the campaign. Meanwhile there is time for the breach to widen between the two Republics of the Transvaal and Orange Free State and for Lord Roberts's proclamations to become known.

One of the great difficulties which the medical service has had to contend with during the present war in a difficult country like South Africa must have been the searching for, and the stripping of the ground of, the wounded after an engagement. The battles have not been on the large scale which has taken place in many big European campaigns or in the American war and consequently there have not been such overwhelming numbers of wounded to be collected and transported to the dressing stations and field hospitals. On such occasions as these large numbers of the wounded have had to remain where they fell for many hours, or possibly even days, before any succour could reach them, simply because it was impossible to have anything like the necessary number of stretcher-bearers and vehicles ready to remove them and on account of the time which it takes to do so under the best possible organisation. If anyone will only take the trouble to make a calculation of the number of vehicles and stretcher-bearers and of the time required to transport any given number of wounded men any given distance from the fighting line to the rear he will realise the arithmetical nature of the problem. In the engagements in South Africa the collection of the wounded from the field has generally been well and promptly done, but there must nevertheless have been many cases where the delay in discovering and removing the wounded was considerable and unavoidable. That is one great reason for having ambulance wagons of the lightest kind consistent with safety. The British ambulance wagon is a good one of its kind, but it strikes us as providing for the accomplishment of too much and as being too heavy. An ideal system would perhaps be to carry the hospital to the wounded instead of the wounded to the hospital. That is impossible of realisation; the most that can be done is for the hospital service to put out its feelers behind and in the immediate track of the fighters in the shape of search parties and bearer columns with manual and vehicular transport, after the way in which it is now done. This is a direction in which the various Red Cross societies could be of great aid if properly organised, in addition to the various other directions in connexion with the hospital service in which they do so much admirable work. The great thing to be attained is that the regular and the various volunteer aid societies should work harmoniously together on a well-organised and well-understood system such as, we believe, is the case at the present time. Everything in war should be so designed as to be a help, and not a hindrance, to the regularly constituted branches of the service.

The somewhat sudden death of General Joubert is announced. The cause is variously given, but it is probable, from the many rumours which have from time to time reached England, that he has been ailing since the beginning of the war. We can but echo Sir George White's generous tribute to his character—a tribute rendered before he was aware of his fatal illness—"a soldier and a gentleman and a brave and honourable opponent."

THE QUEEN'S VISIT TO THE WOUNDED AT THE HERBERT HOSPITAL, WOOLWICH.

The Herbert Hospital at Woolwich, which the Queen visited on March 22nd in order to see the wounded from South Africa, was erected in 1866 and was named after Lord Herbert, the then Secretary of State for War. There are 700 beds in the main hospital and the wards are arranged four to a pavilion united by covered ways and open terraces, from designs by Captain Galton, R.A. Princess Christian and Princess Victoria of Schleswig-Holstein accompanied the Queen. Her Majesty was attended by Colonel the Hon. H. C. Legge and Colonel Davidson and the Countess of Antrim, Miss Emily Loch, and Sir Arthur Bigge were the members of her suite. Major-General J. F. Maurice, C.B., and the staff of the Woolwich command were in attendance on Her Majesty. On arrival at the hospital the principal medical officer, Lieutenant-Colonel U. J. Bourke, R.A.M.C., was presented to the Queen, as were also the following officers: Lieutenant-Colonel J. J. Lamprey, R.A.M.C., Civil Surgeons T. Hartington, E. S. B. Eames, C. J. Jackson, and the acting superintendent of nurses, Miss Vaughan. Every man Her Majesty saw and spoke to was presented with a bunch of choice flowers. The Princess Christian and Princess Victoria of Schleswig-Holstein conversed with the wounded and were greatly interested. On leaving for Windsor the Queen expressed great pleasure at all she saw and the arrangements made for her visit to the wounded at the Herbert Hospital.

The following telegram has been received:—

"Windsor Castle.

"To Lieutenant-Colonel Ulick Bourke, R.A.M.C.

"I am desired by the Queen to express to you Her Majesty's entire satisfaction with all she saw at the Herbert Hospital on Thursday.—BIGGE."

SHORT REPORTS OF INTERESTING CASES OF GUNSHOT WOUNDS FROM SOUTH AFRICA NOW IN NETLEY HOSPITAL.

The following cases serve to illustrate further our remarks on the remarkable nature of the wounds caused by the Mauser bullets.[1] Among the wounded of the Highland Brigade at Magersfontein were the following cases.

CASE 1.—Sergeant ——, of the 2nd Royal Highlanders, was wounded three times. One bullet entered one and a quarter inches below and outside the left nipple and passed out at the level of the ninth dorsal vertebra one and a half inches to the left of the vertebral column. He had hæmoptysis for eight days and his injury was followed by pleurisy. A second ball (explosive) or part of a shell brushed the side of his face and the third bullet entered the inner side of the left arm one and a half inches above the inner condyle of the humerus and passed out close to the coracoid process. The arm measures one inch less in circumference than its fellow and there is some loss of power. The patient is quite convalescent.

CASE 2.—Private —— (Royal Highlanders) was wounded by a bullet on the left side of the head over the posterior portion of the frontal convolutions. He was trephined in South Africa. He has now some loss of memory and marked slowness of thought and expression, his speech is very difficult, he has constant epiphora (more marked on the left than on the right side), and some paralysis of the muscles of the face on the right side.

CASE 3.—Private ——, of the Black Watch, was wounded by six bullets, one of which passed through the middle third of the left arm; the second bullet went through the soft parts of the back over the left scapula; the third ball entered by the left acromion process and cut its way out at the apex of the axilla posteriorly; the fourth bullet passed through the left leg and knee-joint (the motion of the joint is hardly impaired); the fifth ball passed through the left foot; and the sixth caused a flesh wound of the right calf. The patient is quite convalescent, but has partial paralysis of the left arm.

CASE 4.—Sergeant ——, of the Highland Light Infantry, was wounded by a ball which passed through the sole of the foot and severed the tendon of the extensor proprius pollicis. He has entirely lost the power of extending the great toe.

CASE 5.—Private ——, of the 1st Battalion Coldstreams, was twice wounded at Magersfontein. The first ball entered in the back over the left scapula, two inches below the spine and near the axillary border; it passed out one and a half inches below and outside the left nipple. He suffered from hæmoptysis and while he was having his wound dressed a second bullet struck him obliquely on the front of the chest over the second left costal cartilage and, passing through the soft parts, emerged one and a half inches above the right nipple; this ball afterwards passed through the lower third of the right arm.

CASE 6.—In the case of Private ——, of the 1st Battalion Suffolk Regiment, the ball struck the left malar bone and passed out at the vertebral border of the left scapula at the level of the spinous process. The ball fractured the malar bone and the lower jaw and there is now partial ankylosis of the inferior maxillary articulation.

CASE 7.—Private ——, of the York and Lancaster Regiment, was shot at Acton Homes on Jan. 20th. The entrance wound is below the outer third of the right clavicle and the exit wound at the apex of the right axilla posteriorly. The symptoms of aneurysm of the axillary artery are now present.

CASE 8.—Lance-Corporal ——, of the 2nd Battalion Wiltshire Regiment, was wounded at Colesberg. The ball entered in the tenth intercostal space in the posterior axillary line and passing through the stomach cut its way out in the middle line just below the xiphoid cartilage. He suffered from hæmatemesis for one day and had malæna for three days. The wounds were quite healed in three weeks, the exit wound being the first to heal up. When he was shot the shock swung him round, but he was able to march 1000 yards after receiving his severe injury when he was forced to lie down, feeling very sick.

CASE 9.—Private ——, of the 2nd Battalion of the Queen's Regiment, was, when lying down, struck by a bullet at Spion Kop. The bullet entered at the front of the right shoulder and emerged in the middle line of the right axilla. The brachial plexus was injured and the patient is now suffering from paralysis and loss of sensation in the hand. Both the median and ulnar nerves are affected, but especially the former.

CASE 10.—In the case of Corporal ——, of the 1st Battalion of the Border Regiment, the ball passed through the nose, the left side of the hard palate, the left tonsil, and out through the neck about six inches below and behind the ear. He was lying down when he was struck and was about 600 yards from the enemy's position at Spion Kop. The entrance wound (the scar of which can be scarcely seen) is about an inch from the tip of the nose, slightly to the right of the middle line.

CASE 11.—Private ——, of the 1st Battalion of the Border Regiment, was wounded by a fragment of shell on the right side of the head; the injury was followed by left hemiplegia which is still marked.

CASE 12.—Private ——, of the Lancashire Fusiliers, while lying down, was struck on the spine of the left scapula at the battle of Spion Kop. The ball has lodged in his body, but does not give rise to pain or inconvenience.

[1] THE LANCET, Feb. 17th, p. 485.

(NOTES FROM SIR WILLIAM MAC CORMAC.)

(Continued from p. 877.)

I arrived in Durban on my return from my second visit to Chieveley on Feb. 13th. On the following day I visited the hospital ship *Maine*. Unfortunately, Lady Randolph Churchill had that morning started off for Pietermaritzburg, accompanied by Surgeon-Lieutenant-Colonel F. H. Hensman, A.M.S.—the senior medical officer of the ship—for the purpose of meeting her younger son, who was lately wounded near Chieveley. I was therefore unable to meet either her or the principal medical officer in charge, but the second in command (a major of the United States Army Medical Service) very kindly conducted me over the ship. Everything that could be desired for the comfort of the wounded, both from a surgical and a nursing standpoint, is to be found on this vessel. There are a large ward which can accommodate 60 patients, another for 59, and an officers' ward with 17 beds. There are a most excellent operating-room, very complete armamentarium and dispensary, and also a completely fitted x-ray room. Unfortunately, however, the ship itself is not what one could describe as suitable for a hospital. The upper deck is good, and large ports admit sufficient air, but on the lower deck the ports must often be shut. Most of the ventilation has to be carried on by electric fans (eight to every 60 patients), and there is not that sufficient cubic area or sufficient height between decks that might be expected. Lady Randolph Churchill is personally indefatigable in her attentions and kindness to the patients, as are also the entire surgical and nursing staff. Luxuries in the way of food and drink and clothing of every variety abound, practically there is nothing that "Tommy" asks for which he is not able to get, and the ship has received so many gifts in this respect that, I understand, it has become food for thought as to how these things are to be eventually disposed of. As many as 35,000 boxes of biscuits have been presented, among many other like gifts. No word could be too good for the *personnel*, the equipment, and the devoted care bestowed on the patients, but one cannot help regretting so lavish an expenditure on so inferior a hull.

After carefully inspecting the *Maine* I paid a visit to the hospital ship *Nubia*. This was my second visit to this vessel, my first having been in December last, when she was in process of being fitted up at very short notice under the direction of Captain Holland, Royal Indian Marine. This is, indeed, a beautiful vessel of nearly 7000 tons. There are ample room 'tween decks, plenty of upper deck accommodation, comfortable cots in wards, excellent convalescent cabins, good sanitation, and, in fact, after a most careful inspection, I can express nothing but the greatest admiration for the whole arrangements, and I consider that the greatest credit is due to Captain Holland and his assistants for the rapid and effective manner in which they performed the work of fitting up this ship locally at a total cost of £4500. Lieutenant-Colonel Hodder, Army Medical Service (retired), is in medical charge, and the patients enjoy the best of treatment and nursing. Captain Holland informs me that £16,000 were spent at home upon the fittings of the *Maine* and that it became necessary to spend another £1000 upon her locally on her arrival at Durban. The difference between this sum and that spent upon the *Nubia* is very noticeable.

After inspecting the *Nubia* I and my secretary embarked upon the Union steamship *Galeka*, *en route* for Port Elizabeth, for the purpose of joining Lord Roberts at Modder River.

In connexion with this subject of hospital ships the following details, supplied to me by Captain Holland, R.I.M., are of interest. These ships have been fitted out at Durban, according to size, in from 10 to 15 days. The following vessels were fitted out by the Naval Transport Department. The *Lismore Castle*, 242 patients (21 officers and 221 men), was fitted, under much pressure, in the brief period of four and a half days; cost, £2200. The *Nubia*, 479 patients (42 officers and 437 men), was fitted in 10 days; cost, £4500. The *Avoca*, 378 patients (35 officers and 343 men), was fitted in 12 days; cost, £4000. The *Avoca* sailed for England, full, on Feb. 3rd. The cost of the same number of invalids by a mail steamer would have been approximately £10,000. Vessels such as these are much more suitable for the conveyance of invalids to England than are the mail steamers, the latter being more suitable for the accommodation of convalescents who do not require much medical attendance during the voyage.

On my arrival at Port Elizabeth on Feb. 16th the news of the relief of Kimberley by General French had just reached that place. It caused great enthusiasm in the little town. I determined to push on as rapidly as possible, and through the kindness of the traffic manager of the railway I and my secretary were enabled to start off on the same evening in a special carriage attached to a goods train. We found all the stations along the route occupied by militia detachments, nearly all the available regular troops having proceeded to the front either with General French to Kimberley or with Lord Roberts to the Orange Free State. The hospital arrangements of the detachments left behind are merely those of the ordinary regimental unit, consisting of a regimental medical officer and a few hospital tents sufficient to provide for the usual percentage of cases of sickness. We reached Naauwpoort at 6 P.M. on the evening of the 17th. There were very few troops there also, General Kelly Kenny's division having moved with Lord Roberts, and along with them had gone all the bearer companies and field hospitals also. We reached De Aar at midnight and pushed on at once to the Orange river, arriving there at 7.30 A.M. on the 18th. The same order of things prevailed here. A few detachments of regulars and some militia battalions only were encamped and the medical arrangements, sufficient for the local needs only, were provided for by a field hospital of the Cape Volunteer Ambulance Corps. The camp was fearfully hot and dusty, utterly devoid of grass, and dust storms prevailed to a most unpleasant extent. As our troops have been encamped in these localities for some months the sanitation is becoming a serious matter, especially as one corps relieves another very often at an hour's notice, making the difficulty of keeping the locality clean thereby much greater. We passed through Belmont and Graspan where the battles of those names were fought. These places are now, of course, on the lines of communication, and there is now nothing left to denote the fact that those fiercely contested encounters were fought there except the presence of the neatly constructed graves. The hospital arrangements all along the line from Orange river to Modder river are entirely of a local character, the idea being to convey all wounded straight through from the front by means of the hospital trains to De Aar and the other places farther down the line.

We reached Modder river about 2 P.M. on Sunday, the 18th, and were met by Colonel E. Townsend, C.B., R.A.M.C., the principal medical officer of Lord Methuen's division. The troops at Modder river at present consist of Lord Methuen's original division of 10,000 men with the accompanying proportion of field hospitals and bearer companies. Since Lord Roberts captured Jacobsdal on Feb. 14th there have not arrived any serious cases of wounds at Modder as the wounded are all being accommodated in Jacobsdal. There is no activity at Modder and a few cases of fever and dysentery only remain in hospital, so that my presence there would not be of any particular service. I therefore borrowed an ambulance wagon and, accompanied by Captain F. A. Symons, R.A.M.C., a soldier servant, and all our impedimenta, started for Jacobsdal. We jolted across a very heavy road, forded the Modder river, and then reached a fairly level road which in some parts had even been macadamised in a modified way. About half way along we passed a deserted Free State encampment, consisting of a collection of about 20 bell tents, numbered and bearing the mark of the Free State. The tents must have been deserted in a very rapid and sudden manner. An old weary horse remained as the sole survival, quietly grubbing about amongst the short herbage for food. We completed the journey of 11 miles in three hours and I do not envy the feelings of a seriously wounded man who is compelled to travel far along one of these roads in an ambulance wagon.

On arriving at Jacobsdal we found the little square of the small town absolutely packed with bullock and mule wagons. Lord Roberts and his staff occupied the deserted house of the landdrost or chief magistrate, who had fled, and the little hotel afforded means of food supply to all comers of the commissioned ranks. The rank and file bivouacked in the open square or under the lee of the houses. I was provided with a room in Lord Roberts's house and slept there on the night of our arrival. His lordship started off with all his staff at 4 o'clock A.M. on the morning following my arrival and he persuaded me not to follow him across the open country as my services as consultant could be of no avail at the immediate front, and all the prospective wounded from the march upon Bloemfontein would be despatched to Jacobsdal and Modder river *en route* for the hospital trains. He advised me to remain at these places for a few days and then to proceed to Kimberley.

This town of Jacobsdal was only captured by us four days before my arrival. The sanitary condition is very bad indeed and I fear that disease may break out here before long unless matters can be remedied in this respect. The utmost order prevails in the town, and pickets protect the property of the late inhabitants from pillage or interference of any kind. In the square, among the many other vehicles, rests a collection of the Boer ambulance wagons. These consist of covered conveyances of all possible descriptions, and each flies a large Red Cross flag. These curious vehicles are all provided with mattresses, and although not so serviceable or clean are probably just as comfortable, if not more so, to a wounded man than our own wagons. A wonderful old stage coach and an old landau are two of the most conspicuous ambulance carriages.

The German Red Cross Society are in charge of the hospitals in the town. These hospitals consist of two churches, a school house, and four cottages, all of which fly the Red Cross and German flags. The Transvaal Government accepted the aid of this ambulance society, a similar offer having been declined by our Government. The hospital is under the direction of Dr. Kuettner, who is an assistant of Professor von Bruns of Tübingen, and of Dr. Hildebrand, assistant to Professor von Esmarch. The small detached one-storeyed houses are rather ill fitted for the purpose and the walls of several of them are deeply pitted by the impact of our rifle bullets. Dr. Kuettner also told me that several of our shells landed unpleasantly close to them. The patients are chiefly Boers, wounded at the battles of Magersfontein, Klip Drift, and Jacobsdal itself. A few of our officers and men were admitted yesterday from the recent engagements in this vicinity, but they will shortly be transferred to Modder river *en route* further down the line. These German surgeons and their assistants have apparently been doing good work for the last three months. Their medical comfort supply is now running short, particularly as their convoys from their base at Bloemfontein are now cut off by us. Their hospital will therefore in future be supplied with food materials from our medical stores. In addition to the surgical hospital there is a church which is being used for medical cases, among which several typhus fever cases are present.

Affairs are on the move beyond this place in the Bloemfontein direction and nobody can say what the next few days may bring forth. I append a few of the more important cases in which I interested myself which are at present lying in the hospital at Jacobsdal.

SCHOOL HOUSE.—NO. 1 WARD (16 BEDS).

1. *Injury by rock fragments.*—The patient, a Boer, was wounded at Magersfontein on Dec. 11th, 1899, by fragments of rock which were dislodged by a shell; they hit the patient in the head, causing a compound fracture of the skull. To-day (Feb. 19th) a few fragments of bone were removed from the left side of the cranium over the motor area. The dura mater was found to be injured. There were also, on admission, fracture of the sixth, seventh, and eighth ribs and the inferior angle of the scapula, contusion of the left lung with emphysema of the skin and hæmoptysis, and paresis of the

right leg—not the arm. The last-named symptom is now improving and the patient is convalescent.

2. *Wound of the abdomen.*—In the case of this patient, a Boer who was wounded on Dec. 11th by a Lee-Metford bullet, the entrance wound was at the ninth rib, three inches from the median line, on the left side, and the wound of exit was at the spine of the ninth dorsal vertebra on the same side about one and a quarter inches from the spinal column. The patient showed no symptoms for about 14 days, when he presented signs of a subphrenic abscess forming beneath the diaphragm. This abscess was drained from behind without resection of the rib and the man is now doing well.

3. *Wound of the abdomen.*—The patient, a Boer, was wounded at Modder river on Feb. 14th by a Lee-Metford bullet. The entrance wound was an inch behind and an inch above the anterior superior spine of the right ilium, the exit wound being an inch internal to the posterior superior iliac spine on the same side. The bullet perforated the sacrum. There were no symptoms except immediately after the receipt of the injury, when there was much pain. The patient is now doing well.

NO. 2 WARD (11 BEDS).

4. *Wound of the femoral artery.*—The patient, a Boer, was wounded on Feb. 8th by a Lee-Metford bullet. There is a wound traversing the right thigh and the femoral artery in the upper part of Hunter's canal has been injured. The limb was at first threatened with gangrene but it is now rapidly recovering. There is no sign of local aneurysm.

5. *Wound of the lung and the pleura.*—The patient, a Boer, was wounded by a Lee-Metford bullet at Magersfontein on Dec. 11th, 1899. The entrance wound was about the middle anterior border of the trapezius on the left side. Empyema of the right pleura supervened. The pleural cavity was opened up and drained and the bullet came out with the pus, being apparently free in the pleural cavity. Resection of the eighth rib in the scapular line was performed. Hæmoptysis occurred for a few days, but no symptoms have taken place since beyond those connected with the empyema. The patient is now convalescent.

6. *Incomplete fracture; gunshot perforation of the tibia.*—In this case the patient, a Boer, was wounded on Dec. 11th, 1899. The bullet, which entered the crest of the right tibia at the junction of the upper and middle thirds, found a point of exit posteriorly at the junction of the upper and middle thirds. It traversed the bone without causing complete fracture.

NO. 3 WARD (17 BEDS).

7. *Wound of the mouth and the lung.*—In the case of this patient, a Boer who was wounded by a Lee-Metford bullet on Feb. 14th at Jacobsdal, the entrance wound was at the tip of the tongue in the median line. The bullet came out after passing through the left lung a little below the inferior angle of the left scapula. Much swelling remains in the neck and there is hyperæsthesia in the area of the left radial nerve. There is also present hæmothorax and some hæmoptysis continues.

8. *Wound of the knee.*—This was an interesting case of resection of the left knee-joint in a lad, aged 20 years. The wound, which was brought about by a shrapnel bullet at Magersfontein on Dec. 11th, 1899, caused extensive fracture. This is the only knee resection that I have seen. The limb does not appear to be in very good position, but the boy is doing well.

9. *Chest wound.*—The patient was a Boer who was wounded at Jacobsdal on Feb. 14th by a Lee-Metford bullet which caused four wounds in a transverse direction. The wound of entrance was an inch internal to the left nipple, while that of exit was an inch to the right of the right nipple. There were also two other intermediate openings, one of entrance and the other of exit, on each side of the sternum, quite close to this bone, at the nipple level. There was much hæmoptysis, which is still continuing (Feb. 19th), so probably the lung has been damaged.

10. *Wound of the patella.*—This was the case of a Boer who was wounded at Jacobsdal on Feb. 14th by a Lee-Metford bullet. The entrance wound was at the centre of the left patella and the exit wound at the posterior aspect of the thigh, about four inches above the level of the articulation. There is at present a great deal of blood in the joint but there is no general disturbance and the wounds are healing.

NO. 1 COTTAGE (10 BEDS).

11. *Wound of the abdomen.*—The patient, a Boer, was wounded at Magersfontein on Dec. 11th, 1899. The entrance wound was an inch below the level of the umbilicus and slightly to the right, the wound of exit being half-way between the crest of the right ilium and the last rib, exactly in the line of the ascending colon. A fæcal abscess formed and this was followed by a fæcal fistula. The patient is steadily improving. The amount of fæcal discharge from the fistula is daily diminishing.

12. *Wound of the right temple.*—In this case, which was that of a Boer who was wounded at Jacobsdal on Feb. 14th by a Lee-Metford bullet, the entrance wound was in the right temporal region, its point of exit being through the right zygoma. The sight has been destroyed in both eyes. The patient is otherwise well.

13. *Wound of the lung.*—The patient, a private of the British Mounted Infantry, was wounded at Jacobsdal on Feb. 14th by a Mauser bullet. The bullet entered through the inner extremity of the right clavicle, which is apparently perforated without complete fracture, and emerged opposite the sixth dorsal spine three inches from the middle line on the right side. A limited amount of hæmoptysis and cough were the immediate result, but nothing else followed, and the patient is now convalescent.

NO. 2 COTTAGE (THREE BEDS).

14 *Wound of the lung and the forearm.*—Private ——, Cheshire Regiment, was wounded at Jacobsdal on Feb. 14th by a Lee-Metford bullet. The entrance wound was at the fourth rib, an inch from the sternum on the right side, while that of exit was in the mid-axillary line on a level with the right nipple. There is also a second wound of the muscles of the left forearm, paralysing the radial nerve. There were cough and dyspnœa, but no hæmoptysis.

15. *Wound of the femoral artery and vein.*—In the case of this patient, a Boer, who was wounded at Jacobsdal on Feb. 14th, a Lee-Metford bullet entered at a spot near the apex of Scarpa's triangle, wounding the femoral artery and vein and traversing the thigh. The artery and vein were both double ligatured shortly after the receipt of the injury and divided. Gangrene of the foot, however, has supervened and amputation of the leg below the knee will be performed to-morrow.

16. *Wound of the head and neck.*—The patient, a Boer, was wounded at Jacobsdal on Feb. 14th. The entrance wound was at the tip of the nose, slightly to the right side. The bullet traversed the palate at the junction of the hard and soft portions, slightly to the left side, and emerged opposite the sixth cervical spine one and a half inches from the middle line. There is no evidence that any important structure was injured. The patient is now convalescent.

NO. 3 COTTAGE (10 BEDS).

17. *Wound of the lung and the arm.*—This patient was a Boer who was wounded at Jacobsdal on Feb. 14th. The entrance wound was at the inferior angle of the right scapula, that of exit being in the central line of the sternum two inches from the notch. There is a certain amount of emphysema around the exit wound, but the wound is almost healed and the patient is doing quite well. There is also a flesh wound through the left arm. There was no hæmoptysis or cough. The patient is now convalescent.

18. *Wound implicating the abdomen and the thorax.*—Colonel —— was wounded at Klip Drift on Feb. 16th. The entrance wound was one inch below the eighth costal cartilage on the right side three and a half inches from the linea alba in the median line. The point of exit was at the posterior border of the sterno-mastoid muscle two inches above the right clavicle. There is a fracture of the clavicle in its outer half, but this may or may not have been caused by the bullet. There is no hæmoptysis or cough, but some dyspnœa, and the patient is generally very hyperæsthetic. The bullet must have traversed the margin of the liver and the diaphragm and lung. On the 20th he had a normal temperature but there was no serious symptom and the patient only complained of the pain of the broken clavicle.

19. *Wound of the pelvis and thigh.*—This was the case of an officer in the Oxfordshire Light Infantry who was wounded at Jacobsdal on Feb. 14th. The entrance wound was one and a half inches below and externally in an oblique direction to the anterior inferior iliac spine on the left side, that of exit being at the inner side of the same thigh through the adductor longus muscle, four inches below the pubes. The vessels have escaped, but the external branch of the anterior crural nerve has been injured, causing loss of sensation.

20. *Wound of the lung.*—Private ——, Duke of Cornwall's Light Infantry (mounted infantry), was wounded by a Mauser bullet. The entrance wound was at the eighth interspace in the posterior axillary line on the left side, the bullet finding exit through the sixth rib, two inches below and external to the left nipple. There was extensive hæmothorax, but no general symptoms otherwise.

NO. 4 COTTAGE (11 BEDS).

21. *Wound of the lung.*—Private —— was wounded by a Mauser bullet at Jacobsdal on Feb. 14th. The entrance wound was at the second intercostal space, an inch to the right of the sternum, and that of exit opposite the inner border of the right scapula and two inches from its inferior angle. There was hæmothorax up to the angle of the right scapula. There was no hæmoptysis or cough, but dyspnœa was present. The patient is doing well.

22. *Wound of the lung.*—The patient, Private ——, was wounded at Klip Drift on Feb. 16th by a Mauser bullet which entered opposite the fourth dorsal spine half an inch to the left of the middle line and emerged at the sixth rib in the mid-axillary line. There was extensive hæmothorax but no hæmoptysis. Great dyspnœa was present. The temperature on the evening of Feb. 17th was 102° F. The patient is in a critical condition.

23. *Wound of the pelvis.*—Private ——, was wounded at Klip Drift on Feb. 16th by a Mauser bullet. The bullet entered at a point two inches below the crest of the left ilium and two inches behind the anterior superior spine and came out through the centre of the right buttock. There was some tympanites. No rise of temperature. There are neither fæces nor blood in the urine and no blood from the rectum. There is no evidence of visceral injury and the man appears to be rapidly recovering.

24. *Wound of the abdomen.*—In the case of Private ——, wounded at Klip Drift on Feb. 16th, the entrance wound was close to the posterior inferior spine of the right ilium, the wound of exit being two and a half inches from the anterior superior spine on the same side in a line joining it and the umbilicus. There were tympanites and pain the temperature was 100° F. There were cough and tenderness. No serious symptoms are so far present (Feb. 20th).

25. *Perforating wound of the thorax and arm.*—Lieutenant —— was wounded at Klip Drift by a Mauser bullet which entered at a point an inch to the left of the tenth dorsal spine and emerged in the mid-axillary line at the fifth rib on the right side. The bullet then traversed the upper arm outside the humerus at its middle, causing a simple flesh wound. Hæmoptysis occurred for a couple of hours only. There was no cough or dyspnœa. The wounds have healed and the patient is convalescent.

The wounds here noted are mainly by the Lee-Metford bullet and it will be seen that they closely resemble those produced by the Mauser bullet, the difference in weight of the two projectiles being only about three grains, the Lee-Metford being the heavier. It will again be noticed how many apparently most serious abdominal wounds are recovered from—in one of the cases mentioned above after the formation of a fæcal fistula. The chest and lung wounds are quite similar in their consequence to those of the Mauser bullet. I have now seen a very large number of cases of abdominal injury in which recovery has followed an expectant treatment and where without any reasonable doubt the intestines must have been perforated, a few in which the stomach was traversed, and two or three liver injuries. I myself entertain no doubt that in the future a perforating gunshot wound of the abdomen where from the direction taken by the bullet the intestine has almost certainly been traversed is no longer an indication of the necessity of immediate operative interference.

WILLIAM MACCORMAC.

(FROM OUR SPECIAL CORRESPONDENT AT THE BASE.)

This has been a very busy week with everyone, as the wounded and sick from the various engagements at the front have been coming down in shoals, no less than 31 officers arriving at No. 1 General Hospital by one train. Luckily with a few exceptions the cases have been not of a serious nature; but at the same time the strain on our accommodation has been very great, as close on 100 officers alone have had to be taken in and cared for. On the Natal side it has been quite as bad if not worse, as, in addition to the number of wounded, the sick from Ladysmith have had to be accommodated. From what I can learn the majority of the cases from Ladysmith have been those of enteric fever and dysentery with a few wounded, but it will take some time before the garrison of that unfortunate city recover their normal energy. It is to be fervently hoped that any idea of still continuing Ladysmith as a camp will be strongly vetoed, especially as the sanitary surroundings are very far from satisfactory or up to date. Upon the value of its strategic position I am unable to offer an opinion, but as to its healthiness even in peace time there can be no two opinions, and the sooner it is abandoned as a military camp the better for all. The Boer prisoners have been coming down in trainfuls and are being put up on the cycling ground in Cape Town and on transports in Simon's Bay. They appeared to be a miserable, half-starved lot and seemed heartily glad to be out of harm's way and sure of a comfortable meal and a smoke.

I am sorry to say that two or three undoubted cases of bubonic plague have made their appearance in one of the transports carrying forage, the *Kilburn*, from Rosario. Immediate steps have been taken by the port officers and the ship has been removed to the quarantine ground, and all necessary precautions have been carried out. I do not at all apprehend any serious consequences, but at this time, with the harbour full of shipping, it is most unfortunate that such a *contretemps* has occurred. A great number of civilian surgeons and nursing sisters have been sent round to Natal from here, as the pressure of work there has increased to a considerable extent and their services were badly required.

The Iveagh Hospital, with Sir W. Thomson and Mr. G. Stoker, are, I believe, going up-country shortly, and every vessel from England brings us more recruits for the medical service.

Sir William MacCormac and Captain F. A. Symons, R.A.M.C., left last week by the *Norman en route* for England, *viâ* Zanzibar and the Suez Canal. Sir William MacCormac's services were, of course, of the greatest value to us, and his genial manner and courtesy will cause him to be greatly missed by the officers of the Royal Army Medical Corps, with whom he was an especial favourite, not only for his well-known abilities, but for the consideration and kindly feeling which he has always exhibited towards us. A man possessing more tact and knowledge of the world it would be difficult to find, and we all trust that he will reach home safely and in good health and will be ready to aid us in our next campaign.

Several transports have left for England during the week conveying sick and wounded for Netley, and there are still a great number of officers and men waiting for conveyance. It has been the object of the authorities not to overcrowd the steamers, and nothing but good reports have reached us as to the accommodation and food on the voyage home. The *Majestic* arrived out last week and will, I hear, go up to Durban and thence home with a full complement of sick and wounded. Princess Christian's hospital train has gone on to Natal, as it was more required there than on this side, where we have at present three well-fitted ambulance trains running between the front and Wynberg.

The providing of a convalescent home for officers has proved to be a great boon, as it enables the hospitals to clear out those of their patients who are but slightly wounded and who are rapidly nursed and fed back to health at Claremont which has had to increase its accommodation to 60 beds during the last four weeks. I may add that there are two yachts in the harbour the owners of which have generously put them at the disposal of convalescents, sparing no expense or trouble to make their guests comfortable. They are sumptuously fitted and every comfort is provided, so that the wounded officer's lot is decidedly a happy one as far as Cape Town and its suburbs are concerned.

This evening we hear that the Boers are making a determined stand between Osfontein and Bloemfontein and that a big fight is coming off, so I expect our hands will be full again in a short time.

We have been having rather unusual weather for this season of the year and the rainfall has been greatly in excess of normal seasons, but taking it all round the climate cannot be improved upon up to the present, but later we shall not, I expect, be so fortunate, as the vicinity of the Cape during the autumn and winter is not a desirable residence for sick or wounded.

I have not touched on the subject of bullet-wounds this week, as your other correspondents keep you *au courant* with the variety of cases, but they still present the same weird characteristics as regards the courses which the bullets take.

The more one sees of them the more one marvels how these missiles can inflict such slight injuries during their erratic progress. After this campaign I am open to believe anything I hear about the courses of Mauser bullets as long as I am not asked to verify their stopping powers when a bone has not been struck or a vital organ reached.

March 8th.

THE HEALTH OF THE NAVY IN 1898.[1]

THE naval medical reports being almost entirely of a statistical nature are not by any means a light and lively form of literature and they lose much of their interest by not being published at an earlier date after the events to which they refer; and to the professional reader their usefulness, as it seems to us, is curtailed by their not embodying far more information of a medical character than they do. The short notes which are intercalated in the text as a sort of running medical commentary in elucidation of the figures are just sufficient to stimulate the reader's desire for more. Her Majesty's fleets go everywhere and naval medical officers have a wide and varied experience and they enjoy opportunities for gathering together a mass of instructive and interesting information such as does not fall to the lot of other men. We want to know more about the diseases and injuries from which our sailors suffer, the nature and causes of them, and the influence which climate, life at sea, and the conditions to which Her Majesty's seamen are exposed have had in their production. Something in the way of brief topographical reports descriptive of the climate, natural history, hygienic conditions, and the endemic or prevalent diseases of some of the stations visited by our naval medical officers would be of considerable and novel interest. These officers must have a good deal to write about which would not only be well worth reading but, bearing as it were an official stamp, would also be a valuable, because reliable, record of observations for future reference.

The little maps illustrative of the stations occupied by Her Majesty's fleet which are interspersed among the leaves of the report are, by the way, a useful feature. But we should like to see something more than a statistical report of the health of the navy, published annually, under the auspices of the naval medical bureau and compiled from reports furnished from time to time and from other data in its possession. With regard to the apparent delay in publication to which we have alluded, we recognise that this probably cannot be avoided and it is attributable to the fact that returns have to be drawn up and gathered together from various foreign stations and afterwards analysed, compiled, and compared with one another in the Admiralty at home.

The total force in the service afloat in 1898 was 82,830 officers and men. The report under notice tells us that the returns for the year 1898 may be regarded as on the whole satisfactory. The aggregate number of cases of disease and injury recorded for 1898 furnishes a ratio of 906·09 per 1000, which is an increase of 11·28 per 1000 on that of 1897, but a decrease of 60·04 per 1000 compared with the average of the previous 10 years. The increase as compared with 1897 was principally due to the East Indies station, chiefly in cases of simple continued fever, and also to an epidemic of dengue on board the *Eclipse*. The Mediterranean and the Cape of Good Hope and West Coast of Africa stations show a substantial reduction in the ratio of cases, due on the latter station to a comparative exemption from malarial fevers. The invaliding ratio of the total force was 28·86 per 1000. The death-rate was 4·91, which is slightly less per 1000 than that of 1897 and 1·94 per 1000 below the last ten years' average. This is, the report states, the lowest obtained since 1856, when these reports were first prepared in their present form. The lowest sick-rate was on the North American and West India station, and the highest on the East India station. The total number of deaths in 1898 was 407; of this number 295 were due to disease and 112 to injury. The death-rate from disease was 3·56 per 1000 and from injury 1·35 per 1000. The invaliding rate (28·86 per 1000) was lower than in 1897 but somewhat higher than the average of the last 10 years.

[1] Statistical Report of the Health of the Navy for the year 1898. Printed for Her Majesty's Stationery Office by Eyre and Spottiswoode, printers to the Queen's Most Excellent Majesty. Price 1s. 10d.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 6824 births and 4807 deaths were registered during the week ending March 24th. The annual rate of mortality in these towns, which had declined from 25·8 to 20·3 per 1000 in the five preceding weeks, rose again to 21·6 last week. In London the rate was 20·6 per 1000, while it averaged 22·2 in the 32 provincial towns. The lowest death-rates in these towns were 10·7 in Burnley, 14·3 in Leicester, 15·0 in Huddersfield, and 15·2 in Blackburn; the highest rates were 28·6 in Plymouth, 29·0 in Halifax, 31·3 in Liverpool, and 36·7 in Wolverhampton. The 4807 deaths in these towns included 472 which were referred to the principal zymotic diseases, against 424 and 423 in the two preceding weeks; of these 141 resulted from whooping-cough, 123 from measles, 91 from diphtheria, 45 from diarrhœa, 38 from "fever" (principally enteric), 33 from scarlet fever, and one from small-pox. The lowest death-rates from these diseases occurred last week in Brighton, Norwich, Birkenhead, Sunderland, and Gateshead; and the highest rates in Wolverhampton, Salford, Preston, and Sheffield. The greatest mortality from measles occurred in Bristol, Cardiff, Wolverhampton, Oldham, Preston, and Halifax; from scarlet fever in Bradford; and from whooping-cough in Portsmouth, Wolverhampton, Liverpool, Bolton, and Salford. The mortality from "fever" showed no marked excess in any of the 33 towns. The 91 deaths from diphtheria included 36 in London, 19 in Sheffield, eight in Leeds, and four in Leicester. One fatal case of small-pox was registered last week in Hull, but not one in any other of the 33 towns. Five small-pox patients were under treatment in the Metropolitan Asylums Hospitals on Saturday last, March 24th, against numbers decreasing from 11 to five at the end of the four preceding weeks, but no new case was admitted during the week. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 1715, against numbers decreasing from 3578 to 1760 on the 18 preceding Saturdays; 170 new cases were admitted during the week, against 154, 147, and 181 in the three preceding weeks. Influenza was certified as the primary cause of 25 deaths in London. The deaths referred to diseases of the respiratory organs in London, which had been 378 and 391 in the two preceding weeks, further rose last week to 456, but were 18 below the corrected average. The causes of 67, or 1·4 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Leicester, Bradford, Leeds, Newcastle, and in 11 other smaller towns; the greatest proportions of uncertified deaths were registered in West Ham, Birmingham, Liverpool, Preston, and Sunderland.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had declined from 31·7 to 22·7 per 1000 in the four preceding weeks, further declined to 22·2 during the week ending March 24th, but was 0·6 per 1000 above the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 11·8 in Perth and 14·6 in Leith to 23·7 in Edinburgh and 25·2 in Paisley. The 686 deaths in these towns included 19 which were referred to measles, 18 to diarrhœa, 17 to whooping-cough, six to diphtheria, four to scarlet fever, and four to "fever." In all 68 deaths resulted from these principal zymotic diseases, against 92 and 63 in the two preceding weeks. These 68 deaths were equal to an annual rate of 2·2 per 1000, which was 0·1 per 1000 above the mean rate last week from the same diseases in the 33 large English towns. The fatal cases of measles, which had been 17 in each of the two preceding weeks, rose last week to 19, of which 13 occurred in Glasgow, two in Dundee, and two in Paisley. The deaths from diarrhœa, which had been 25 and 18 in the two preceding weeks, were again 18 last week, and included eight in Glasgow, five in Edinburgh, and two in Greenock. The fatal cases of whooping-cough, which had been 24 and 15 in the two preceding weeks, rose again last week to 17, of which 10 occurred in Glasgow, three in Aberdeen, two in Edinburgh,

and two in Paisley. The deaths referred to diphtheria, which had been five, seven, and four in the three preceding weeks, rose again to six last week, and included three in Glasgow, and two in Greenock. The four fatal cases of scarlet fever showed a slight decline from the number in the preceding week, and were all registered in Glasgow. The deaths referred to different forms of "fever," which had been nine and four in the two preceding weeks, were again four last week, and included three in Edinburgh. The deaths referred to diseases of the respiratory organs in these towns, which had declined from 362 to 189 in the four preceding weeks, further fell last week to 170, but were 19 above the number in the corresponding period of last year. The causes of 32, or nearly 5 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 36·8 and 31·2 per 1000 in the two preceding weeks, rose again to 35·2 during the week ending March 24th. During the past four weeks the death-rate in the city has averaged 34·4 per 1000, the rate during the same period being 19·3 in London and 22·1 in Edinburgh. The 236 deaths registered in Dublin during the week under notice were 27 in excess of the number in the preceding week, and included six which were referred to the principal zymotic diseases, against numbers declining from 12 to nine in the three preceding weeks; of these four resulted from diarrhœa, one from scarlet fever, one from diphtheria, and not one either from small-pox, from measles, from whooping-cough, or from "fever." These six deaths were equal to an annual rate of 0·9 per 1000, the zymotic death-rate during the same period being 1·8 in London and 1·9 in Edinburgh. The fatal cases of diarrhœa, which had been five, three, and four in the three preceding weeks, were again four last week. The 236 deaths registered in Dublin last week included 42 of infants under one year of age and 65 of persons aged upwards of 60 years; the deaths of infants and of elderly persons exceeded by eight and seven respectively the numbers recorded in the preceding week. Eight inquest cases and nine deaths from violence were registered, and 90, or considerably more than a third, of the deaths occurred in public institutions. The causes of 11, or nearly 5 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

The following appointments are notified:—Fleet Surgeons: G. Kirker to the *President* for three months' hospital study. Staff Surgeons: Frederick W. Stericker to the *Galatea;* V. G. Thorpe to the *Argonaut;* H. F. D. Stephens to the *Furious;* and W. J. Colborne to the Admiralty Medical Department. Surgeons: S. H. Woods to the *Argonaut;* G. R. MacMahon to the *Duke of Wellington;* and H. W. G. Green to Plymouth Hospital.

The announcement contained in the *London Gazette* of March 6th, 1900, of the withdrawal of Surgeon Ernest Albert Shaw, is cancelled.

THE IMPERIAL YEOMANRY.

J. Ernest Martin to be Medical Officer, with the temporary rank of Captain.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel Knox, retired pay, takes over charge of Cambridge Hospital, Aldershot, and Lieutenant-Colonel J. Martin takes over medical charge of troops at the station hospital, Londonderry.

The undermentioned officers are borne as supernumerary whilst serving with the Royal Army Medical Corps in South Africa:—

YEOMANRY CAVALRY.

Middlesex (Duke of Cambridge's Hussars): Surgeon-Captain C. Stonham.

VOLUNTEER CORPS.

Royal Engineers: 2nd Cheshire (Railway): Surgeon-Lieutenant J. R. Atkinson. 1st Flintshire (Buckley): Surgeon-Major R. T. O'Callaghan. *Rifle:* 2nd Volunteer Battalion the East Lancashire Regiment: Surgeon-Captain A. A. Watson. 4th Volunteer Battalion the East Surrey Regiment: Surgeon-Major E. J. Lawless. 2nd Volunteer Battalion the Royal Sussex Regiment: Surgeon-Lieutenant G. Black. 2nd Volunteer Battalion the South Staffordshire Regiment: Surgeon-Captain J. K. Butter. 3rd Volunteer Battalion the South Staffordshire Regiment: Surgeon-Captain C. A. MacMunn. 1st Volunteer Battalion the Durham Light Infantry: Surgeon-Lieutenant A. E. Morison. 1st Sutherland (the Sutherland Highland): Surgeon-Lieutenant J. K. Tomory.

Memorandum.—The undermentioned officer is borne as supernumerary whilst serving with the Volunteer Battery in South Africa:—1st Northumberland Volunteer Artillery (Western Division, Royal Garrison Artillery): Surgeon-Captain J. Wreford.

VOLUNTEER MEDICAL STAFF CORPS.

The London Companies: Surgeon-Lieutenant E. W. Herrington. The Manchester Companies: Surgeon-Lieutenant J. W. Smith.

MILITIA MEDICAL STAFF CORPS.

Herbert Ernest Dalby to be Surgeon-Lieutenant.

VOLUNTEER CORPS.

Artillery: 1st Ayrshire and Galloway: The resignation of Surgeon-Captain D. Lawrie, which appeared in the *London Gazette* of Jan. 5th, is cancelled; Andrew Young to be Surgeon-Lieutenant. 1st City of London (Eastern Division, Royal Garrison Artillery): Surgeon-Lieutenant A. Allport to be Surgeon-Captain. 2nd Glamorganshire: Surgeon-Lieutenant R. J. R. C. Simons to be Surgeon-Captain; Ashley Bird to be Surgeon-Lieutenant. *Rifle:* 8th Volunteer Battalion the Royal Scots (Lothian Regiment): Surgeon-Lieutenant R. C. Macdonald resigns his commission. 1st Volunteer Battalion the Buffs (East Kent Regiment): Charles Kessick Bowes to be Surgeon-Lieutenant. 3rd (Dumfries) Volunteer Battalion the King's Own Scottish Borderers: Surgeon-Captain W. D'O. Grange to be Surgeon-Major. 3rd Volunteer Battalion the Welsh Regiment: Lieutenant Alfred William Sheen resigns his commission, and is appointed Surgeon-Lieutenant. 2nd Volunteer Battalion the Queen's Own (Royal West Kent Regiment): Surgeon-Captain H. W. Roberts to be Surgeon-Major. 5th Volunteer Battalion the Durham Light Infantry: John Arthur Kendall to be Surgeon-Lieutenant. 18th Middlesex: Surgeon-Lieutenant E. MacW. Bourke to be Surgeon-Captain.

FIELD-MARSHAL SIR DONALD STEWART.

Death has been very busy of late among the ranks of old and distinguished officers. Members of both the army medical services will have heard with great regret of the death of Field-Marshal Sir Donald Stewart at Algiers. The late Sir Donald Stewart had a long and very distinguished career in India where he most deservedly enjoyed a great reputation in his military capacity and one almost equally eminent as an official of strict integrity, sound judgment, and tact. Of his military career in India and his services in the field there is no need to speak, or of the unselfish and generous way in which he stepped aside in favour of Sir Frederick, now Lord, Roberts during the Afghan War before the march of the latter to Kandahar, for these things are well known. Sir Donald Stewart was Commander-in-Chief in India, in which post he was both very popular and highly respected, and at the time of his death he was the Governor of Chelsea Hospital. We may incidentally mention that one of his daughters was married to Surgeon-Major Davies of the Army Medical Department, who died while serving in India, and that this lady subsequently married the eldest son of the late Sir William Jenner, now Sir Walter Jenner, an officer of the 9th Lancers and a member of the Staff College.

TRANSVAAL WAR NOTES.

At a meeting held in Aberdeen on March 22nd, under the presidency of Lady Aberdeen, it was reported that over £877 had been collected in the district for the establishment of a base hospital at Cape Town.

Among the subscriptions received for the Imperial Yeomanry Hospital is one of £2000 collected by Lady Harris.

The West London Hospital has placed at the disposal of the War Office a new ward capable of containing 24 beds. Funds are urgently needed for beds and furniture.

The *City of Rome* steamship arrived at Southampton on

March 23rd. She brought 232 invalids from South Africa to the Royal Victoria Hospital, Netley. The *Dilwarra* arrived with 18 invalids for Netley on March 26th.

TRANSVAAL WAR CASUALTIES.

Died from Disease.—Major James Minniece, R.A.M.C., died from enteric fever at Pietermaritzburg on March 17th. Lieutenant Hall, Volunteer Medical Corps, died at Mooi river on March 20th.

The following gentlemen have joined the Army Medical School, Netley, as surgeons on probation for the Royal Army Medical Corps: A. E. Hamerton, M.R.C.S. Eng., L.R.C.P. Lond., Leeds; C. H. Straton, M.R.C.S. Eng., L.R.C.P. Lond., St. Mary's Hospital; E. P. Sewell, M.B., B.C. Cantab., Cambridge University and St. Bartholomew's Hospital; and T. H. Stevenson, M.B., C.M. Edin., Edinburgh University and Queen's College, Belfast.

Sir James Reid, Bart., K.C.B., has relieved Deputy-Inspector-General H. C. Woods, M.V.O., of the Royal yacht *Victoria and Albert* in medical attendance at Windsor Castle.

Correspondence.

"Audi alteram partem."

"THE DEFECTS OF THE MIDWIVES BILL."

To the Editors of THE LANCET.

SIRS,—On reading my address to the Islington Medical Society in THE LANCET of March 24th on the Defects of the Midwives Bill I find I have not defined with sufficient clearness the view of the General Medical Council as to the suggestion that the midwife in cases of abnormality or danger shall be required to send for a medical practitioner. The Council does strongly insist on this point. But it does not go on—as I do and as the resolutions of the Islington Medical Society do—to urge that the County Council as the local licensing and supervising authority should be required to appoint medical men to whom the midwife can apply in such cases. The Midwives Committee of the General Medical Council did make this suggestion in 1898, but the General Medical Council thought it involved a financial point beyond its province and simply passed the following resolution:—

That the regulations under which licensed midwives are required to practise should include provisions securing that the midwife shall immediately seek qualified medical assistance in every case which presents symptoms of difficulty, abnormality, danger, or disease on the part of the mother or the new-born infant.

I am still of opinion that unless the Bill empowers county councils to appoint and pay medical practitioners to respond to the calls of the new midwife, with powers of recovering cost where practicable, she may often find herself in painful circumstances, or the medical profession will often have to supply gratuitously the defects of her service.

I am, Sirs, yours very truly,

March 24th, 1900. J. G. GLOVER.

THE ORGANISM (?) OF RHEUMATISM.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of March 17th there are three papers on Acute Rheumatism of great interest. I therefore take the opportunity of pointing out that in 1891 I described in THE LANCET an organism which I had found present in the blood in patients suffering from acute rheumatism. My observations tend to corroborate the opinion expressed by Dr. A. E. Garrod that "the infection of acute rheumatism lingered on." I have observed in cases under my care that the organism continued to be present in diminished quantity—sometimes for a week or ten days after the pain and fever had subsided—and in those cases have continued the administration of the salicylate until the blood was quite free from the microbe. I have also treated cases of acute rheumatism with drugs other than salicylates and have found that whereas the administration of salicylate of soda has caused a marked diminution of the microbe in the blood examined within a comparatively few hours, the other drugs used have had apparently no effect, and in the same patient after being treated with bicarbonate of potash, antifebrin, antipyrin, &c., without effect, a few doses of salicylate would cause the rapid disappearance from the blood of the rheumatism microbe. As my previous observations in THE LANCET passed quite unnoticed, and as I think we have a very valuable guide in the treatment of acute rheumatism by the observation of the blood both as to prognosis and treatment, I should, under your supervision, be glad to put my results to the following test to prove the genuineness of the discovery. Will Dr. Garrod or Dr. Maclagan, whose names would put the matter beyond suspicion, send me, say, half-a-dozen cover-glass preparations of blood drawn indiscriminately from patients suffering from acute rheumatism (with fever) and also some from healthy patients? I will undertake to examine the slides and tell them which are the cover-glass preparations from the healthy cases and the ones from the rheumatic fever patients. The slides to be all numbered unknown to me in the presence of an independent witness. Being only a general practitioner fond of the microscope I have not the opportunity of bringing my work before the profession, but in this case I consider the results of such general utility that I venture to make them prominent. Of course, I am quite aware that it is one thing to find a microbic organism constantly present and another thing to cultivate the same and reproduce the disease; the latter is for obvious reasons impossible, and the former a very difficult and perhaps also an impossible matter; but it is quite sufficient for our purpose to find the organism in the blood increasing and declining *pari passu* with the disease.

I am, Sirs, yours faithfully,

EDWARD F. GRÜN.

The Hall, Southwick, Sussex, March 17th, 1900.

A NOTE AND CRITICISM ON OPERATIONS FOR THE REMOVAL OF STONE FROM THE BLADDER.

To the Editors of THE LANCET.

SIRS,—When surgeons publish their cases in the medical journals, and especially when in so doing they make definite statements as to the merits of one surgical procedure as compared with others, they should be very careful lest by recommending wrong procedures they do grave mischief in misleading others. The chief object that should prompt us to publish our cases is that of teaching others and placing our most recent experience before the world. Whilst admitting that the profession at large owes much to the general body of hospital surgeons who give the results of their experience to their less fortunately placed brethren, I fear that sufficient care is not taken to prevent the publication occasionally of wrong principles. I fear, also, that we refrain too often from the uncongenial task of refuting wrong principles and wrong teaching when we see them published.

In the Mirror of Hospital Practice at page 1295 of THE LANCET of Nov. 11th, 1899, is published the following: "A Case of Calculus Vesicæ in a Man, aged 53 years; Suprapubic Lithotomy; Bladder Sutured; Catheter Tied in for 12 Days; Uninterrupted Recovery." It appears that this patient was admitted to hospital on Sept. 25th. He was subjected to suprapubic lithotomy on Oct. 5th, an incision three inches long being made in the linea alba. A soft rubber catheter was tied in and left there for 12 days. The calculus weighed 38 grains. The patient was discharged quite well on Oct. 28th, having been over a month under treatment. In the paragraph introducing the record of the case the statement is made that the treatment of calculus of the bladder is at the present time in a transition stage—a statement that I feel sure those who have had some experience in vesical surgery will not admit. The writer of the paper under reference, after recounting that 40 years ago the lateral operation was acknowledged to be the best, relates how lithotrity came with all its improvements, especially those of Bigelow, and later its extension to children by Keegan and the manufacture of larger and stronger lithotrites which made it possible for the surgeon to deal with success with any stone of whatever size or material. Then comes the portion of the paper to which I take most grave exception: "More recently still there has been a revival of the high operation of lithotomy. ..... And now that fear of wounding the peritoneum, &c., has been almost banished ..... it is not improbable that this operation will in many cases replace the crushing method; there are many arguments in its favour, &c." This teaching is as retrograde as it well could

be. If a particular surgeon for want of experience in the use of a lithotrite or for want of the needful instruments or other cause is driven to adopt a cutting instead of the crushing method in removing a stone from the bladder in a simple case he has committed a sufficient surgical indiscretion without adding to it by publishing the case, and perhaps leading astray some other inexperienced surgeon situated similarly to himself.

If the above case had been subjected to litholapaxy the operation in skilled hands would have occupied a few minutes only—five at the outside. The patient would have been saved the danger, pain, and inconvenience of a wound; he would have avoided the necessity and pain of having a catheter tied in his urethra for 12 days; he would have been up and about and able to walk to his home within probably three days from the operation; he would have been subjected to an operation the mortality from which in cases so simple is almost *nil* instead of one which has a considerable mortality under even the most favourable circumstances; and he would have recovered from his malady with a normal and uninjured bladder instead of having a rigid cicatricial band in it at a part where every fibre should be capable of contraction for the proper physiological function of the organ. These advantages are very real and very important; they are such that they place the operation of litholapaxy for all cases of stone in the bladder where the conditions are suitable first and all cutting operations nowhere.

I now come to another point illustrated by this paper—viz., the relative merits of lateral and suprapubic lithotomy when one of them is necessary. Lateral lithotomy has recently been referred to on more than one occasion as difficult. Surely the difficulty is mythical. Lateral lithotomy is the safer operation of the two if the mortality following it is considered. In the majority of cases when the bladder is sutured after the high operation immediate or first intention union fails to occur, and then the urine trickling over the patient's body irritates the skin and is most inconvenient. The suprapubic method fails completely to drain the bladder as the perineal method does, and this necessity of complete drainage is one of the most important of those exceptional causes which occasionally render a cutting operation preferable to crushing.

Lastly, in lateral lithotomy the incision in the bladder is made in its fixed part and the subsequent cicatrix cannot interfere with its complete contraction for the expulsion of its contents, as a high cicatrix and especially an adhesion, may do. The suprapubic operation has one advantage, and one only, over the perineal—that it enables an inspection to be made of the base of the bladder and would admit of the simultaneous removal of a tumour of the bladder or a projecting lobe of the prostate, but cases like this are rare and would in all probability reveal themselves by special symptoms, careful sounding, and rectal examination.

Mr. T. Vincent Jackson, in THE LANCET of Jan. 6th, 1900, p. 27, after an experience of one case of suprapubic lithotomy, a selected case in a boy, aged eight years, in his remarks criticises "the rather too dogmatic and *doctrinaire* tone adopted by those who so strongly and almost as partisans advocate the modern method of treating stone in the bladder (lithotrity)." I notice these remarks here because I feel that it is possible that they may exercise a baneful influence by encouraging inexperienced surgeons to adopt this method of operating rather than litholapaxy. I can assure Mr. T. Vincent Jackson—and in this I feel sure that I shall be borne out by every surgeon of experience in this line—that it is impossible to be too dogmatic in advocating the advantages of litholapaxy over lithotomy. I hold that to subject a patient with a stone in his bladder, if uncomplicated, to a cutting operation, and particularly to suprapubic lithotomy, is retrograde surgery and might reasonably be condemned in stronger terms.

I am, Sirs, yours faithfully,

J. A. CUNNINGHAM, M.D. R.U.I., Major, I.M.S.,
Medical Officer in Charge, Civil Hospital, Delhi.

March 7th, 1900.

*** That lithotrity as now practised is the most speedy and the safest operation in nearly every case for the removal of a calculus from the urinary bladder all surgeons will agree, but we gather from our correspondent's letter that he is opposed to the high operation of lithotomy under any circumstances. In this opinion we cannot concur; in a small proportion of cases, especially when the prostate is greatly enlarged, the suprapubic operation offers greater facilities to the surgeon for the removal of the stone than does lithotrity, and especially the surgeon is enabled at the same time to inspect the prostatic tumour and to judge of its suitability for operative treatment. The risks of suprapubic operation are now very much less than they were, and the difficulty of drainage has been fully overcome.—ED. L.

THE CONNEXION BETWEEN FEEDING AND CANCER.

To the Editors of THE LANCET.

SIRS,—Hippocrates, the father of medicine, who died 361 B.C., taught that disease might be treated by medicine, by surgery, and by diet. Medicine has had a fair trial and has been in late years almost supplanted by surgery; but there are not wanting signs that the time is fast approaching when diet will be studied as it should be and then even the surgeon will have comparatively little to do. Hitherto it has been a rare occurrence for a physician to call attention to the question of diet and still rarer for a surgeon to do so; but now both physician and surgeon do not hesitate to enter the ranks of dietetic reformers. The last to join the pioneers of the profession is Sir William Banks who, lecturing before the Medical Society of London on Cancer of the Breast, says that as the result of his researches he concludes that over-feeding is the predisposing cause of cancer; and he attributes the increase of cancer to the more general consumption of butcher's meat, the use of which has increased enormously during the last 30 years. Physicians have long taught that gout was the direct result of over-feeding and if their warning were listened to what a fell disease would be banished from our midst. Some physicians have ventured to assert that over-feeding is also the predisposing cause of all our epidemic diseases, lowering the vitality and making us an easy prey to the various bacteria which give rise to such diseases. Now that a surgeon of such eminence as Sir William Banks, after a life study of cancer, with the accumulated wisdom of close observation, has come to the conclusion that the change from the simple food of our forefathers to the highly concentrated food, more especially the fleshy food of the present day, is the cause of that dreaded disease from which in the majority of cases even the unsparing knife of the surgeon cannot save us, may we not hope that the medical profession will in these latter days turn its attention to diet, and under the guidance of Hippocrates, who has left an excellent treatise on the subject, enter upon a crusade against all foods which are known or can be proved to produce disease in man?

I am, Sirs, yours faithfully,

JOHN HADDON, M.A., M.D. Edin.

Hawick, N.B., March 26th, 1900.

To the Editors of THE LANCET.

SIRS,—Everything that tends to clear up the etiology of cancer must be of profound interest to the medical profession. But I think it may well be asked if the impressions—or would it not be better to say guesses—of even the most eminent observers do not as much hinder as promote our knowledge. Especially is this when, as in the case of Sir William Banks and Sir James Sawyer, an attempt is made to blame the consumption of meat for an increase in the cancer rate; without a single experiment or any statistics tending to show that a meat diet produces cancer, or apparently without any regard to the concurrent alterations in the habits of the people. Assuming the fact that cancer in the male is on the increase, is there not more reason to suppose with Mr. Hutchinson that it is due to increased longevity (to which, it is true, increased nourishment may assist) rather than to the increased use of meat? Upon this hypothesis might not Sir James Sawyer's observation that cancer has increased, especially amongst the masses, be explained—viz., that the masses now more often attain to old (or the cancer) age? I would submit that all the evidence at our disposal suggests that the supposed increase of cancer is due, first, to more accurate diagnosis, or at least certification, and secondly, to increased longevity. I remain, Sirs, yours faithfully,

Bradford, March 25th, 1900. W. GILCHRIST BURNIE.

"LEAD POISONING IN THE POTTERY DISTRICTS."

To the Editors of THE LANCET.

SIRS,—The article on the above in THE LANCET of March 24th, page 879, is somewhat one-sided and inaccurate in one particular (conditions so rarely to be attributed to THE LANCET) — inaccurate as the Dr. Armitage — not Armytage — is J. A. Armitage of Wolverhampton and not F. F. Armytage; one-sided as the remarks made by Dr. Lewis Jones only are reported, thus leading your readers to conclude that what he had to say was the most important communication made. From a practical point of view such was not the case, the bulk of his paper being taken up by what anyone acquainted with the rudiments of electricity could learn for himself by reading a good work on medical electricity. Dr. Armitage's paper was made up of clinical material and was a description of the successful treatment of about 40 cases of lead poisoning of varying degrees of severity—one being a case of hemiplegia—and from a standpoint independent of a "current main," the source of the current being Leclanché cells, in contrast to the alternating current as used and recommended by Dr. Lewis Jones, though at a later stage in the treatment he also used the current from an induction coil. Patients were first of all treated by a general bath, both mono- and dipolar methods being used, and for local paralysis local applications with large carbon electrodes. Moreover, the meeting was really called to hear the results of the treatment of the cases under his care, seeing that they were all sent from the Potteries, one very intractable case only having been latterly under Dr. Jones's treatment at St. Bartholomew's Hospital, the result being admitted by Dr. Jones to be unsatisfactory. The discussion turned mainly upon Dr. Armitage's paper, as was to be expected from its clinical character, and as far as could be gathered from the local practitioners present—and who were primarily interested—they are indebted to him for bringing the electric bath treatment before them, and especially for the recital of so many successful cases, encouraging them thereby to put into practice his suggestions—the method being described explicitly and in detail, the appliances in the way of a bath and Leclanché's cells being available to all of them. Of the five, besides the authors of the papers, who took part in the discussion, three only are mentioned, the names of Dr. A. M. McAldowie and Dr. Allan being omitted.

I am, Sirs, yours faithfully,

Longton, March 26th, 1900. C. M. ALLAN.

THE FORMS AND SIGNIFICANCE OF PROTEIDS IN THE URINE.

To the Editors of THE LANCET.

SIRS,—Professor Halliburton, in the remarks with which he concluded the discussion on the Forms and Significance of Proteids in the Urine at the Pathological Society of London on March 20th,[1] referred to a paper which I had read earlier in the evening. With your kind permission I should like to say a word in reply to Professor Halliburton's criticisms of my contribution. I quite fail to see how the pus present in the unfiltered urine of one of my cases could affect the results in the other seven. Albumoses were sought for in most of the urines that I examined but were found in very few and then only in small quantities. With regard to the processes which I employed for separating the proteids from the urine, I admitted in my paper that they were not *absolutely* accurate, but I am unacquainted with any other methods which would give more accurate results and could have been employed on the large scale I required. It was only after numerous preliminary experiments that I decided that Devoto's ammonium sulphate and Hammartein's magnesium sulphate methods, with due precautions, would be the most suitable.

I am, Sirs, yours faithfully,

P. J. CAMMIDGE.

The Medical School, Leeds, March 24th, 1900.

[1] THE LANCET, March 24th, 1900, p. 853.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

The Plague in Calcutta.—Mortality Statistics for Bombay.—Plague Statistics for India.—The Protection of Simla.—Four and a half Millions on Famine Relief.—Inoculation against Typhoid Fever.

CALCUTTA is at last attacked by plague in real earnest. The epidemic has been developing since January and now for the week ending March 3rd 481 cases have been recorded. I understand that during the past few days a still further development has taken place and that about 100 cases a day have been returned. All the theories about subsoil water, malaria, and the character of habitations are now cast to the winds. The rate of general mortality is over 75 per 1000 per annum. The disease is chiefly prevalent in the northern parts of the city, but the most recent reports show that it is beginning to spread to other districts. There is co-existing a certain amount of cholera and to a slight extent small-pox, but it may be said that at the present time the whole of the excess mortality is due to plague. Compared with Bombay, however, the figures of plague and general mortality are comparatively small. Bombay with a population of 821 000 and 2635 deaths last week has a death-rate of over 167 per 1000 per annum; Calcutta with a population of 650,000 and 947 deaths last week has a death-rate of only 75 per 1000 per annum. In Bombay there is also raging an epidemic of small-pox which accounted for 269 deaths last week.

The plague returns for Bombay are absurdly low. There is an excess of deaths above the normal of over 2000, and yet we only find 700 deaths returned as due to plague. During the existing small-pox outbreak there have been over 2000 deaths due to this disease. On the other hand, the cost of plague has probably been during the same period over 20,000 lives. Although it is almost too late in the epidemic to have much effect it is satisfactory to find that over 4000 persons continue to be inoculated weekly, and that the total number who have been inoculated since Sept. 1st last is over 120,000. Compare this with Calcutta, where I am informed that beyond the plague workers there is practically no inoculation carried on at all. It is perhaps fair to add that no inducements seem to be held out in Calcutta for the people to be inoculated. As far as can be judged from previous outbreaks Calcutta has not yet attained the maximum of mortality for its present outbreak, whereas Bombay at the present moment may be said to be passing through those few weeks which form the fluctuating summit of high mortality for every outbreak. Statistics in both cities are very faulty, but the following rates of mortality in Bombay are interesting:—

	Per 1000 per annum.		Per 1000 per annum.
Low Caste Hindus	383	Eurasians	84
Mohammedans...	165	Parsees...	44
High Caste Hindus... ...	186	Europeans	32
Native Christians	140	Jews	31
Brahmins	109		

There is not much doubt, judging from these figures, that the rate for low caste Hindus is too high and for Mohammedans too low.

The plague statistics for the whole of India show for the week ending March 3rd 3363 deaths against 3184 in the previous week. It has already been shown how false are the returns for Bombay and how they under-estimate the mortality from plague. The same remarks apply probably to nearly all other places with the possible exception of Calcutta. There the system of recording adopted accounts for very probably the whole of the deaths from plague. In Karachi there has been a rise from 12 deaths to 47. In the Bengal Presidency there were 1936 deaths against 1905. The disease is said to have appeared in Aden and plague nurses have been despatched for service there. All arrivals from that port are said to be quarantined.

The great precautionary arrangements for the protection of Simla against plague which were in force last year are to be re-introduced with the advent of the Government establishments from March 15th. Medical inspection at Kalka will be rigid and road inspection posts will also be re-established. The special health officer is instructed to pay particular attention to the bazaars, to ascertain the

cause of every death, and to take all precautions in case of death or sickness from suspicious causes. Special arrangements are ordered for the surveillance of officers, clerks, and servants connected with the offices of the Government of India and their families and dependants. For 10 days after arrival at Simla all will be under observation by the local medical staff.

In addition to this increase of plague at nearly every place previously attacked India has the burden of a terrible famine. There has been a recent increase of 120,000 persons on relief and the total at the present time exceeds 4,500,000. The increase has chiefly been in the Bombay Presidency, in the Rajputana State, and in the Central Provinces.

I understand that 27 members of the first detachment of Lumsden's Horse were inoculated against typhoid fever and suffered the necessary inconvenience thereof during the first week of their voyage. From recent reports from South Africa it is a pity that a larger number were not protected, but their destination will fortunately be away from the dangerous quarters of Natal.

March 6th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Liverpool Country Hospital for Chronic Diseases of Children.

THE first annual meeting of those interested in the above-named institution was held at the Town-hall on March 19th under the presidency of the Lord Mayor. The honorary treasurer submitted the financial statement, showing a credit balance of £124 on the current account and £1122 on the new building fund. The committee were looking out for a suitable site for the proposed new hospital. At present the pro-hospital is situated at West Kirby, 22 beds having been rented in the Children's Convalescent Home. As the present conditions were entirely inadequate to meet the applications for admission the committee looked for increased public support to enable them to erect a building capable of accommodating at least 200 beds. The Children's Country Hospital did not enter into competition with any existing charitable institution. It had functions of its own, such as the prolonged treatment necessary to afford cases a chance of recovery which could not be obtained in the general hospitals owing to the requirements of acute cases. It was not a cripples' home, a home for incurables, or a convalescent hospital. The hospital would become a valuable accessory to the city hospitals, two of which had received nominations to the first free beds from generous donors. Each cot now costs £25 a year, or under 10*s.* a week. A charge of a few shillings a week was made, the hospital supplying the difference. For the totally necessitous, the committee had appealed to the public for £25 a year to enable appropriated beds to be provided absolutely free to deserving cases. This appeal has already borne some fruit.

Formalin in Milk: Prosecution at the Police-court.

At the police-court last week a local dealer was prosecuted for having sold milk to which had been added formalin as a preservative. Mr. Collingwood Williams gave evidence to the effect that he had analysed the sample of new milk and found that it contained formalin. When introduced into milk formalin had the effect of retarding decomposition, and the sample in point remained uncurdled for a day longer than did ordinary milk. Professor Boyce of University College also gave evidence to the effect that the presence of formalin in milk was most injurious to the process of digestion and also to the mucous membrane of the stomach, which he had discovered by experiments on a large scale. The addition of formalin to milk also fostered such organisms as the bacillus enteritidis. The defendant, in admitting the offence, pleaded that the use of this preservative was necessary in the poor quarters where his business was carried on, as the milk was kept in the living apartment, in consequence of which it quickly became sour. The case was adjourned *sine die* upon the defendant undertaking to forego the use of formalin in future.

The Proposed Liverpool Branch of the National Association for the Prevention of Tuberculosis.

A meeting of members of the medical profession and others was held at the Medical Institution on March 21st to discuss a proposal to form a Liverpool branch of the National Association for the Prevention of Consumption and other Forms of Tuberculosis. A deputation, including Dr. E. W. Hope, the medical officer of health, and Dr. Nathan Raw, who had been chiefly instrumental in bringing the subject forward in Liverpool, was chosen to approach the Lord Mayor with the request that he should call a town's meeting to inaugurate the scheme.

The New Assistant Medical Officer of Health.

Arthur A. Mussen, M.D. Dub., D.P.H. Cantab., has been appointed assistant medical officer of health in the room of Dr. E. P. Manby, resigned. Dr. Mussen had filled a similar post at Huddersfield for 18 months.

The Foundation of a Colonial Fellowship in the School of Tropical Medicine.

A colonial fellowship of the value of £100 a year for five years has been endowed in connexion with the Liverpool School of Tropical Medicine. The generous benefactor, who wishes to remain anonymous, has stipulated that the fellowship shall only be awarded to a graduate or student of a colonial university desirous of studying bacteriology in the Thompson-Yates laboratory.

March 27th.

NORTHERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

Student Volunteers.

ON Wednesday, March 7th, a rather unusual occurrence took place in St. George's Hall, Newcastle-on-Tyne. At 3.30 P.M. 45 of the medical students of the Durham University College of Medicine marched in order under the command of Lieutenant Fullerton to St. George's Hall, where they were met by 60 students from the Durham College of Science, the united bodies being enrolled as a separate company in the 3rd Volunteer Battalion Northumberland Fusiliers (the "Fighting Fifth") under the charge of Colonel Downing. This occurrence is very unusual from the fact that the men selected their own officers and were accepted as a complete company by Colonel Downing.

University of Durham College of Medicine: Interesting Presentation to Dr. F. Page.

On Friday, March 23rd, the students of the Newcastle-on-Tyne Royal Infirmary and of the University of Durham College of Medicine entertained Dr. Frederick Page to dinner in the Hotel Métropole, Newcastle, Professor Philipson, the President of the College of Medicine, occupying the chair. About 80 guests were present, including the entire medical staff of the College of Medicine and of the Royal Infirmary and many past students. After the usual loyal and patriotic toasts, Dr. Nathan Raw, in proposing the health of Dr. Page alluded to his retirement from the hospital. Dr. Page, he said, had been not only a teacher but a friend to the students and he ranked as one of the most skilful surgeons in the country and was an ornament to his profession. The presents consisted of a candelabra, six candlesticks, and three fruit dishes, all of silver, and were given to mark the esteem and respect of the subscribers upon the occasion of Dr. Page's retirement from the position of surgical lecturer. The inscription on the testimonial reads as follows: "Presented to Professor Page by the past and present students of the University of Durham College of Medicine on his retirement from the post of Honorary Surgeon to the Royal Infirmary, Newcastle-upon-Tyne, March 23rd, 1900." Dr. Page, who, on rising, was greeted with prolonged applause, made an eloquent reply, regretting the necessity of abandoning work that he loved. The health of Dr. Ranken Lyle was proposed by Mr. Stanley Raw who welcomed him on behalf of the students as the successor of the late Dr. Nesham in the chair of Midwifery and said that Dr. Lyle had already ingratiated himself and won the respect and regard of the Newcastle students as he had previously done at the Rotunda Hospital, Dublin.

March 27th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Church of Scotland Deaconess Hospital.

ON March 21st the fifth annual meeting of friends and contributors to the Church of Scotland Deaconess

(Lady Grisell Baillie Memorial) Hospital was held in the hospital, Mr. W. T. Maxwell of Munches being in the chair. The annual report, which was read by the convener of the hospital board of management, stated that the number of patients treated during the past year was 323, as against 333 during 1893. The average daily number under treatment was 22. The number of patients treated since the opening of the hospital in 1894 was 1453. The accommodation available for patients consisted of 24 beds and four cots for children. The number of visits paid by the district nurses during the year was 3733, the average daily number of visits paid being from 18 to 20. The maternity cases which were attended numbered 33. The total sum received for upkeep during the year amounted to £1577 12*s.* 6*d.*, while the total expenditure had been £1409 11*s.* 7*d.*, leaving a balance in hand of £168 0*s.* 9*d.* The average cost per bed had been £41 12*s.* The board had offered four beds to the War Office for invalided or wounded soldiers from South Africa. The convener also alluded to the fact that the physician to the hospital, Dr. Francis Boyd, had been appointed to the staff of the Scottish South African Hospital. Professor Sir William Turner moved the adoption of the report.

The late Dr. R. H. Gunning.

The name of Mr. Robert Halliday Gunning, M.D., LL.D., Edin., whose death took place in London on March 22nd, is one which is tied by many links to Edinburgh. Dr. Gunning became a Licentiate of the Royal College of Surgeons of Edinburgh in 1839 and graduated as Doctor of Medicine in the University of Edinburgh in 1846. He always showed a very great interest in the University and was the founder of the "Gunning Victoria Jubilee Prizes" in the Faculty of Medicine. These Gunning prizes consist of 11 post-graduate prizes of £50 each. In recognition of his public services the University conferred on him the title of Doctor of Laws.

Maternity Hospital for Dundee.

At a meeting of the directors of the Dundee Royal Infirmary on March 22nd it was intimated that the buildings for the Diseases of Women and Maternity Hospital which had been erected in the Infirmary grounds, were now completed and were practically ready for occupation. As regarded the finances of the hospital the Forfarshire Medical Association had obtained £5000 towards that object from the trustees of a large bequest. Subsequently other £5000 were raised by public subscription and then Mr. J. K. Caird, Dundee, most generously undertook to erect the whole buildings at his own expense; so that the £10,000 previously subscribed is available for endowment purposes. The buildings are believed to have cost from £7500 to £8000. Mr. Caird in handing over the buildings to the care of the infirmary directors intimated that he would give a further donation of £1000 towards the furnishing of the wards of the hospital.

The Edinburgh and East of Scotland South African Hospital.

On March 22nd the staff of the Edinburgh and East of Scotland Hospital for South Africa were inspected in the quadrangle of the old University, Edinburgh, by General Chapman, C.B., commanding the troops in Scotland. The staff left Edinburgh from the Caledonian Station on March 23rd, and received a most hearty send-off both from crowds in the public thoroughfare and from hundreds of people who had been admitted to the railway station by ticket.

The Scottish National Red Cross Hospital.

The first section of the Scottish National Red Cross Hospital, consisting of 100 beds, will be despatched to South Africa about the middle of April, if the Government can provide transport at that date. The surgeon-in-charge is Mr. Henry Clark, senior surgeon to the Glasgow Royal Infirmary, with Dr. J. Luke of the Glasgow Royal Infirmary as second surgeon. The six nursing sisters of the Army Nursing Reserve will be superintended by Miss Shannon, night superintendent at the Western Infirmary. This section of 100 beds will, on the advice of the Director-General of the Army Medical Service, be constructed in the form of tents of the tortoise pattern.

University of Aberdeen.

The Lizars Gold Medal in Anatomy has just been awarded to Miss J. C. Macleod, L.L.A., Rosneath, Aberdeen, being the first time in the history of the University that this distinction has been won by a lady student. Miss McLeod has also gained the vacant Mather (medical) bursary.

Aberdeen City Hospital.

The town council of Aberdeen have appointed Councillor William Boddie, J.P., as chairman of the City Hospital Committee in succession to Councillor James Fraser who recently died suddenly in one of the baths at the Corporation Baths, Aberdeen sea-beach.

Aberdeen Medical Staff Corps.

There are now 150 of all ranks of the Aberdeen Company Volunteer Medical Staff Corps which is in excess of the authorised establishment—namely, 133. No more recruits are therefore being admitted at present. The corps is now fully equipped for the field. The officer commanding (Surgeon-Captain J. Mackenzie Booth) has requested non-commissioned officers and men to volunteer to join the Royal Army Medical Corps for service in South Africa or for home service.

March 27th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Dublin Public Health Inquiry.

THE committee appointed to inquire into the causes of the high death-rate of Dublin concluded their sittings on March 22nd and proceeded to consider their report. Sir Charles Cameron, the superintendent medical officer of health, volunteered some supplemental evidence on matters already dealt with during the inquiry. Referring to the evidence of Dr. Katharine Maguire he stated that there was no doubt as to the meritorious work in which the ladies of the Alexandra Guild were engaged and he had given instructions to the sanitary officers to assist them as far as possible. In reply to Dr. Moore, the President of the Royal College of Physicians of Ireland, Sir Charles Cameron stated that in his opinion intramural interments in vaults of churches were distinctly objectionable and dangerous to the public health. In some cases he had seen coffins blown up by the gaseous products of decomposition, and he understood that in some instances small openings were made in order to prevent this result. He looked upon the system as a barbarous one. Mr. Henry Campbell, town clerk of Dublin, in his evidence condemned the insanitary condition of some of the schools in the city connected with the National Board of Education. He mentioned the case of a school where 500 children attended daily in a building which was damp and cold and in which the roof and walls were wet. The evidence is interesting as it corroborates the statements recently made by Professor Roche in an article in THE LANCET. The investigations of the committee have now come to a conclusion and they have before them a large mass of evidence on which to found their report. It seems to your correspondent noteworthy that although the high and long persistent rate of mortality from typhoid fever was made clear no inquiry was instituted into the method pursued for the disinfection or destroyal of the typhoid fæcal dejecta in the large fever hospitals or in connexion with isolated cases. The evidence as to insanitation, overcrowding, dirt, &c., does not seem to offer a sufficient explanation, for it has been long notorious that enteric fever has prevailed widely and claimed many of its victims, not from the slums, but rather from the wealthy, least-crowded, and best quarters of the city.

Commissioner of Education in Ireland.

His Excellency the Lord Lieutenant has appointed Sir Francis Cruise, consulting physician to the Mater Misericordiæ Hospital, to be one of the Commissioners of Education in Ireland.

Royal College of Surgeons in Ireland.

The Royal College of Surgeons in Ireland occupies a foremost place among the crowd of public bodies in Dublin who wish to offer a suitable welcome to Her Majesty. The college buildings with their handsome frontage of cut stone will present a fine appearance when the present elaborate scheme of decoration and illumination has been completed.

The Gas-Lighting of Dublin.

Under the heading "Change in the Composition of the

Dublin Gas Supply" a rather startling statement has recently appeared in the public papers from Professor Emerson Reynolds, F.R.S., of Trinity College, who, in a lecture there, pointed out that an important change had just taken place in the city gas supply, consisting in the addition of a considerable proportion of what is technically called "water-gas" to the ordinary product from coal. Ordinary coal-gas contains about 6 per cent. of the deadly poisonous carbonic oxide to which it owes chiefly its own poisonous effects when respired. Water-gas contains from 30 to 40 per cent. of that poison. Its addition to the ordinary lighting gas of the city raises, therefore, the proportion of carbonic oxide and consequently renders the city gas more than usually poisonous. Professor Reynolds explained in detail how the change was noted and its extent measured. 12 analyses of the city gas were made in the College laboratory between Nov. 25th and Feb. 16th, the mean results of those analyses proving that the average coal-gas contained 6·2 per cent. of carbonic oxide. A subsequent series of analyses shows that the proportion of carbonic oxide increased steadily until it reached 12·6 on March 7th. The analysis of March 12th showed a proportion of 17·9 per cent., but on March 17th it stood at 10·6 per cent. Professor Reynolds concluded by saying that there was no reason for undue alarm or for assuming that the addition of water-gas to coal-gas was not legitimate provided that the mixture maintained by carburetting the standard value of 16 candles. "I think," he said, "however, that the fact of so material a change in the nature of the supply should have been notified to consumers in order that they might be on their guard against escape of the new gas through defective fittings or by imperfect combustion from flaring on unsuitable jets."

The Water-supply and Drainage of Newtownards.

The Local Government Board have written to the Urban Council of Newtownards requesting them to take steps to provide the urban district with a sufficient supply of good, palatable water without further delay, and also to obtain the services of a qualified and experienced engineer for the preparation and carrying out of a new sewerage scheme for the district.

The Union Society of Queen's College, Belfast.

The annual report presented on March 23rd at a business meeting shows that financially there is a slight balance. The total receipts were £296 10*s.* 6*d.*, of which £131 13*s.* 9*d.* were obtained from the billiard-room and £56 11*s.* 9*d.* from tobacco sold in that place. The profits on the sale of tobacco were £8 12*s.* 3*d.* There are 159 members now on the roll.

The Close of the Medical Session at Belfast.

The winter medical session for 1899–1900 comes to a close this week (March 31st). The examinations in medicine of the Royal University will begin in Dublin on April 18th and will, it is expected, be completed in time to allow those members of the Belfast medical school who are engaged in them to commence the summer session on May 1st.

March 26th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Paris Water-supply.

AT a meeting of the Municipal Council of Paris held on March 15th several resolutions were passed with a view to increase and improve the quality of the supply of drinking-water to Paris. It was resolved to acquire a tract of land for the purpose of supplying the aqueduct of Loing with an additional intake. It was also resolved that an inquiry should be undertaken as to the existence of springs and underground supplies of water so as to complete the supply of the aqueduct of the Dhuys, and that a stationary analytical department should be organised at the head waters of the Arve and the Vanne or, if this were not feasible, that a flying analytical department should be formed.

Kleptomania in a Medical Man.

A Doctor of Medicine was recently summoned before the Tenth Correctional Chamber of the Tribunal of the Seine on a charge of theft. In the month of February he had on two occasions opened the till of his hairdresser and had each time abstracted 20 francs. On Feb. 6th, at the moment of again yielding to temptation, he was arrested and at once taken before the Commissary of Police, to whom he confessed his guilt. He was not taken before the magistrate but was condemned to eight months' imprisonment. At the Commissariat of Police he declared that he could not explain the motive for his act. The case is all the more inexplicable as he is very well off.

An Epidemic of Septicæmia among Children at Nurse.

At the meeting of the Hospital Medical Society held on March 9th Dr. Lesage gave an account of a most interesting form of septicæmia which he had observed as affecting children at nurse. It is very acute and its course so rapid that in a few hours the temperature runs up to 40° or 41° C. and death supervenes in a very short space of time. There is intense dyspnœa although auscultation reveals nothing wrong with the respiratory apparatus. The patient is obviously very ill, presenting a pale, anxious appearance, with great dryness of the tongue and lips. The child occasionally give a half-stifled cry, is very drowsy, and sometimes has slight diarrhœa. Death rapidly supervenes but no definite lesion is found post mortem. Microscopical examination of the bronchi, however, shows the presence of streptococci. Facts of special interest in the cases noted by Dr. Lesage are the finding of pneumococci in the bronchi and the epidemic nature of the malady. In one hospital 16 cases occurred in five days and 15 of the patients died. The infection appears to be conveyed by nurses. The illness lasts from a few hours to two or three days, and its clinical course is the same as that of the septicæmia described by Hutinel. The epidemic died out for want of patients, and at its termination the wards were disinfected and everything settled down again. Dr. Lesage considers that these facts prove that a nurse-child is very easily affected by the pneumococcus as well as by the streptococcus, and this extreme sensitiveness brings about a general septicæmia before the tissues of the organism have time to erect a defensive barrier and so confine the infection to a local manifestation.

The Examination for Hospital Appointments.

The public examinations of the Assistance Publique seem fated always to be marked by some "incident." An examination was held recently for the nomination of six hospital physicians and was conducted under the new regulations which I have already described[1]—that is to say, there are 12 judges, and after the testing of each candidate every judge writes his opinion upon a piece of paper which is folded up and the opinion is given by the writer without any consultation with his colleagues. At the end of the examination the voting-papers are arranged in a decreasing order and one candidate is selected. In this instance the examination had already begun when one of the judges, Dr. Wurtz, discovered that one of the candidates was his cousin eight times removed. Dr. Wurtz therefore asked the authorities of the Assistance Publique whether owing to this circumstance there was any danger that later the election might be rendered invalid. It was considered that Dr. Wurtz would do better to retire from the jury. This of course left only 11 judges instead of 12 and then the question arose as to whether this did not annul the whole procedure and whether another jury should be elected. The political press took the matter up and clamoured for a new jury, arguing that out of 11 the majority would be six and hence that as there were six places to give away it would be quite easy for six of the judges to work matters so that every one could return his own candidate. They even went so far as to give the names of the six who were sure to be elected. The scandal, however, is very slight, for both the judge and the candidate were quite ignorant up to the time of the examination of any connexion between them and the candidate resigned at the same time as his judge. But the accuracy of the details furnished by the public press proves conclusively that these latter derived their information from other candidates who were jealous or discontented with the position they had attained and so wanted a new jury and a new election so as to get another chance. The incident is regrettable as showing the personal nature of the feeling at these elections. Although the judges forming the jury are drawn by lot, once its composition is known it is easy to forecast results. The relations of a pupil to

[1] THE LANCET, vol. ii., 1899, p. 1198.

his master have much more influence upon impartiality than cousinship in the eighth degree. It is quite evident why under these conditions candidates who do not see their teachers chosen by lot on the jury should wish to have the drawing over again. Some time ago certain waggish candidates suggested that the examination should simply be confined to the drawing of lots.

March 27th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

An Army Medical Officer on the War in South Africa.

DR. KRUMMACHER, one of the German army medical officers who were sent to the scene of war in South Africa as medical attachés to the British army, has now returned to Germany and has published his impressions. He highly praises the sanitary arrangements of the British army. The tents carried with the troops proved extremely valuable at Magersfontein, where the soldiers suffered much from the hot days and the cold nights. The British suffered more from the rifle fire of the Boers than from their artillery fire, the Boers being unequalled as marksmen. They used to aim at the officers, who were easily recognisable by the brightness of their uniforms. Afterwards in the course of the war the uniform of the officers was made to resemble that of the men. It was very remarkable that the Boers never fought at night. At sunset they used to stop firing and retired even when they had gained a favourable position. As to the alleged abuse of the Red Cross, of which there were so many complaints in the newspapers, Dr. Krummacher states that he never saw anything of that kind. The ambulance to which he was attached was sometimes fired upon by the Boer artillery, but only when it stood in the neighbourhood of a body of troops, so that it was probably the latter that were aimed at. The British troops once captured a Boer ambulance because the ambulance men were accused of having fired on the British. When this report had been proved to be erroneous the ambulance was at once sent back to the Boers. The medical attachés will submit a detailed report of their observations to the German military authorities.

The Title of "Sanitätsrath."

A remarkable law-suit has lately been before a court at Marburg arising out of the bestowal of the title of "Sanitätsrath" (sanitary councillor) on a medical practitioner in that town. It is the custom to grant this title to nearly every medical man of respectability and good professional standing after he has been engaged in practice for a period of from 20 to 30 years. This title is not connected with any Government appointment, but is a mere personal distinction like so many others in this country, where people are, as a rule, rather fond of titles. The medical man in question was quite pleased with his new dignity, but when the diploma was delivered to him he was mortified on finding that he had to pay a stamp duty of 300 marks (£15) according to the Stamp Laws of 1895. He paid the duty but afterwards brought an action against the Treasury to have this sum restored on the plea that he had not been asked beforehand by the Government whether he desired to have the title or not. He asserted that he had gone to law with the Treasury solely in the interests of the medical profession, as it was in his opinion unjust to charge a medical man for a title whilst the Government accepted the gratuitous services of the medical profession in so many cases. The decision was in the plaintiff's favour, but in view of the fundamental importance of the matter the Treasury has appealed to the High Court where this curious incident will be definitely settled.

The Case of Professor Neisser.

Some experiments on immunisation against syphilis, made by Professor Neisser the well-known dermatologist of Breslau, have recently been the subject of discussion in the Prussian Diet. The facts of the case, which have been misunderstood by the adversaries of scientific research both in Parliament and in the daily press, are briefly as follows: Professor Neisser injected sterilised blood-serum of syphilitic persons into prostitutes and into two children in order to immunise them against the disease. The experiment had no bad sequelæ whatever. Several years afterwards some of the prostitutes suffered from syphilis, which first manifested itself on the genitals, so that the attempted immunisation had proved a failure. That they had been infected by the injection, as was alleged by Professor Neisser's adversaries, was quite impossible owing to the length of time between the giving of the injections and the appearance of the syphilis, together with the fact that none of the patients other than the prostitutes contracted the disease. These facts were gravely misrepresented by different speakers, Professor Neisser being said to have injected syphilitic virus in order to see whether it was contagious or not. Several members of the Diet asked the Minister of Public Instruction if Professor Neisser had been or would be prosecuted for what he had done. The Minister, Dr. Studt, and the Chief of the University Department, Herr Althoff, stated that Professor Neisser had not performed his experiments for frivolous reasons, but for the eminently humane purpose of combating syphilis. They said that he no doubt erred in making experiments on patients without previously asking them whether they consented to the injections or not. The Minister admitted that he might have been prosecuted under the criminal law, but as the acts complained of were committed six years ago there was, under the circumstances, no likelihood of a prosecution. The Government had not yet considered whether it would be advisable to make use of its disciplinary power over him as a professor of a State University. Professor Virchow, as a member of the Prussian Parliament, said in the debate that every new method must necessarily be used as a new method at least once on the human subject after it had been tried on animals. He said that Dr. Edward Jenner, Professor Koch, Professor Behring, and other men of science who had done so much for the prevention of diseases had all made experiments under the same conditions as Professor Neisser. The Minister, Dr. Studt, closed the debate by asking the members of the Diet not to indulge in denunciations of the medical profession in general, which had distinguished itself by its devotion to the interests of the State and ought to serve as an example to other citizens. The leading medical papers protest strongly against the unfriendly manner in which some members of the Prussian Diet spoke on the subject of medical men and medical science. They, however, blame Professor Neisser for having subjected his patients to this treatment without their consent. The matter is not yet finished, but it is very unlikely that the Government will take any steps against Professor Neisser.

March 26th.

SWITZERLAND.

(FROM OUR OWN CORRESPONDENT.)

The Swiss Army.

ACCORDING to official reports the strength of the Swiss army on Jan. 1st, 1900, was as follows: 1. "Auszug" (men from 20 to 32 years of age), 150,876 men, comprising 113,617 infantry, 4551 cavalry, 20,442 artillery, 5586 engineers, and 4928 in the sanitary corps. 2. "Landwehr" (men from 33 to 45 years of age), 87,364 men, a well-armed and well-trained militia, making with the Auszug a total of 238,240 men. In case of war the youths from 16 to 20 years of age would also be available as some 6000 of their own free-will receive military instruction, generally on Saturday afternoons and Sunday mornings; then part of the "Landsturm" (men over 45 years of age), making a total of 277,007, would also be available and would be of great use for defensive purposes and for keeping up communications. General conscription was introduced many years ago, but only about half of those presenting themselves for medical examination are annually accepted, the percentage being 52·4 in 1898 and 51·8 in 1899, or a number of 16,773 men (1899) The obligatory military service is seven weeks in the first year, six weeks in the second year, and about three weeks every two years up to the age of 32 (Auszug); afterwards in the Landwehr, up to 45 years of age, only a few weeks' service every three or four years. Officers have to do about five months' service before they obtain their commissions. Men excluded from service by the medical authorities have to pay a high military tax consisting of capitation tax, income property tax, tax on expected property—viz., property the men are legally entitled to from parents, grandparents, or other

relatives. The enforcement of this tax is only possible owing to the fact that the Swiss civil law obliges the citizens to leave their property in certain legally determined parts to relatives in the first and second degree. Thus a father can only dispose of one-tenth of his property as he chooses; nine-tenths must go to his children. In this way the authorities have control over property in expectation and curious results ensue. A man of wealth may find himself, as a grandfather, obliged to pay a heavy military tax for his grandson who happens to be studying law or medicine and on whom a large sum as military tax is levied. The alternative for the man is to serve in the military offices as clerk at 1*s.* 8*d.* a day to pay off such a debt.

Cerebral Complications due to Intestinal Infection.

Dr. T. Seitz, of Zürich, sums up 15 such cases, five of which are recent unpublished cases, permitting of interesting deductions, the cases having gone through the most thorough bacteriological investigations. No doubt an invasion of the blood and lymphatics by intestinal bacteria now and then takes place and obscure cerebral disease may result. In seven out of the 15 cases bacteria of the intestines could be definitely and decidedly proved to be the originators of the cerebral disease. The only cause for wonder is that the protective apparatus must work almost perfectly, given the enormous amount of intestinal bacteria, otherwise such cases would be far more frequent. In fatal cases the post-mortem examination fails to confirm the clinical diagnosis of meningitis or encephalitis apparently established beyond doubt and only the most careful bacteriological examination reveals the existence of some few staphylococci, streptococci, or bacteria coli; the toxins of these bacteria must therefore play a more important rôle than the bacteria themselves. In some cases infantile convulsions and sudden death are certainly due to this mode of infection.

Zürich, March 24th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Medical Instruction in the United States.

THE system of medical instruction in the United States has for several years been undergoing a very remarkable change. The method of teaching classes by oral lectures has until recently been universally practised. No effort was made to classify the students according to the length of time during which they had studied. In the same lecture-room and listening to the same professor were one-year, two-year, three-year, and four-year men, and as a matter of fact not one in 10 received any real instruction. There was a medical college at one period which had but one professor who lectured on the seven branches. But in the best schools the system has entirely changed and this change is due to the union of those schools with universities which has led them to adopt the methods of teaching peculiar to those institutions. It is true that the medical department of the University of Virginia has classified its students for many years and taught by recitations in small classes, but the number of students has been very small and its example has not influenced the larger metropolitan colleges. It has long been recognised by examining boards that candidates from the Virginia College, as a rule, excelled those from other colleges, especially in technical knowledge. It was not until within the last decade that the larger colleges became thoroughly incorporated into the university systems of government and this new position has led to important changes in the details of management which appear most markedly in the methods of teaching. The old lecture system has been entirely abandoned as a scheme of general instruction and is limited to the higher branches which require for their proper elucidation the knowledge and experience of the professor. Classes are arranged on the basis of the advance of the students in knowledge into those for one-year, two-year, three-year, and four-year men. For each of these grades assistant professors or tutors are provided and class recitations are held, the text-books being uniform. No student can advance from a lower to a higher class who has not attained a given grade of qualification. Under the old system the student was rarely questioned on any subject and there was no educational barrier to his advance. In the case of most students the first individual contact of the teacher with the taught was at the final examination for graduation. Now the student is daily required to demonstrate to the teacher his exact status in his studies, and at the termination of fixed periods his markings during the term are the tests to determine whether he can advance to a higher grade. The results of this rational method of teaching are most important. The graduates from these university medical schools take the highest rank in their profession wherever they locate. It is gratifying to notice also that these higher-grade colleges which were at first shunned are now becoming more and more popular and their classes are yearly increasing in members. The more progressive of these schools have recently established educational qualifications for admission which require graduation from a literary college.

The Death of the Author of the "Gold Cure" of Alcoholism.

The death is announced of Dr. Keeley, the author of the notorious "gold cure" of alcoholism. For many years this method of treating inebriety has had an enormous popularity and institutions devoted to the "cure" have multiplied in every State. The central office was at the village of Dwight in the State of Illinois, which was a veritable Mecca of the victims of delirium tremens. The remedies used were kept a profound secret and each patient had to take his dose directly from the physician in attendance. The results of inquiries in regard to the true success of the treatment were all negative. I at one time investigated cases of reported cure but found none that had not relapsed after they had returned to their old haunts. There is no doubt that some did abstain for a long period as was the case with the converts to teetotalism during the crusade of Father Mathew, the famous Irish temperance lecturer. Though the craze after the "gold cure" has long since passed there are many institutions in the different States which continue as a business enterprise, for immense sums of money have been made by the promoters of the supposed "cure."

The Farm Colony for the Insane.

The question of providing an economical method of caring for the chronic insane has agitated those interested in treatment of this class for many years, but has not until recently taken any other practical form than the introduction of a few trades into existing asylums. In two of the States asylums for the chronic insane have been established separate from the asylums for the acute, but no useful results have followed because the same methods of care have been continued in the chronic as in the acute. Many efforts have been made to introduce the boarding-out system of Scotland, but the managers have strenuously objected, alleging that the people of this country are not adapted for such duties. Several of the States have within the last decade encouraged their asylum managers to experiment with farms, and the result has been so encouraging that the subject of establishing farm colonies for the chronic insane is attracting much attention. In Michigan a farm colony was established many years ago and the success has been twofold—viz., financially the farm has paid richly and a far larger number of chronic insane have recovered than under any former conditions. At Utica the experiment is in progress and the latest reports of Superintendent Blumer show a most encouraging success. The plan proposed is the creation of an organised community with all its trades, farm labour and products being the central feature, because by far the larger number of the population must necessarily be engaged in farm work. Should this method of caring for the chronic insane continue to succeed there will be a complete revolution in our institutions for the insane and greatly to their advantage.

Indigence in Porto Rico.

Major Hoff of the United States Army and President of the Porto Rico Board of Charities states in his report that in a population of 956,779 there are over 80,000 persons requiring assistance, and that from 400,000 to 600,000 rations are issued weekly. Those who can work for their rations are required to do so, and these number upwards of 9000. There is an average of 4000 sick. The immediate suffering in Porto Rico is due to the severe hurricane which desolated the island, destroying not only all the crops and a vast number of dwellings, but maiming and killing large numbers of people.

Tenement House Exhibition.

New York has lately been entertained with an exhibition of model tenement house plans prepared for competitive

examination. It originated with the Charity Organisation Society, the object being to awaken an interest among the wealthy in the efforts of that society to improve the tenements of the poor by constructing a class of better dwellings which will, when properly managed, return a fair income to the owners. The exhibition included models, plans, photographs, maps, charts, and tables of statistics. They were designed to show existing conditions in New York tenement houses, model tenements all over the world, suburban dwellings, lodging-houses, health conditions, poverty conditions, agencies for betterment, and finally the competitive plans for model tenements, parks, and playgrounds. One of the most interesting group of photographs illustrated the evolution of the New York tenement house on the usual 25 feet by 100-feet lot. First was the common dwelling-house occupying 50 per cent. of the lot, four storeys and basement, three rooms with closets on each floor above the parlour floor; next the same building is converted into a tenement house, requiring in the same space two living rooms, six bedrooms, hall and stair way; then appears the same building, but on the rear portion of the lot another has been erected with one living room and three bedrooms, and now 75 per cent. of the lot is occupied, while the number of tenants has been increased at least 33 per cent.; finally, the modern tenement rises to view covering 90 per cent. of the lot with its dark, unventilated sleeping rooms and a population of 100 persons where at first there were but five. There were also illustrations of English model tenements—viz., amongst others dwellings erected by the Peabody Donation Fund, those of the South London Dwellings Company, the Four Per Cent. Dwelling Company, the Guinness Trust, and a group representing Miss Octavia Hill's work, with a reproduction of Sargent's portrait of Miss Hill. For one week the society held a series of meetings at which eminent speakers discussed in public all the phases of the improved tenement house movement. Upwards of 300 plans were submitted to the jury appointed to adjudge awards. The exhibit will be sent to the Paris Exhibition, after which it will find a permanent place in New York.

Illness being an Act of God justifies a Breach of Promise.

A curious case of breach of promise, where the defendant alleged an intercurrent disease for which he was not responsible as his defence, has recently been decided by the Court of Appeals of Virginia. It appears that after the engagement and before the time fixed for the marriage the defendant had without fault of his own developed and was suffering from a grave malady involving the urinary organs, viz., cystitis, with probable inflammation of the urethra, complicated with enlargement of the prostate. He had been advised and believed that sexual indulgence would aggravate the disease and would be likely to shorten his life; that it would be not only a wrong to himself but an injustice to the plaintiff if he married her in his condition of health. The court held that "illness" is an act of God and beyond the power of man to control or prevent, and that if the performance of a contract is rendered impossible by the act of God alone such fact will furnish a valid excuse for its non-performance, and such a stipulation will be understood to be an inherent part of every contract. Marriage is assumed in law to be for mutual comfort, and being satisfied from the evidence that the defendant acted throughout with good faith the unhappy circumstances in which he found himself justified the alleged breach of his contract to marry the plaintiff.

March 18th.

CARDIFF PORT SANITARY AUTHORITY.—The medical officer of health to the Cardiff Port Sanitary Authority (Dr. E. Walford) in his annual report for 1899 states that the floating population of the district is estimated at 7000 persons, contained for the most part in the West Bute, East Bute, and Roath Docks, Cardiff, and Penarth Dock and Tidal Harbour. During the year 11 patients were admitted to the Cardiff hospitals for infectious diseases; eight of these were cases of typhoid fever and three proved fatal. 7170 vessels were inspected and of these 1597 were found to be in a defective or insanitary condition. The frozen meat trade of the port is a large industry and the inspection of such meat forms part of the duty of the inspector. In the year 16 cargoes arrived with about 7000 carcasses of beef and 150,000 carcasses of mutton. 2167 head of live cattle and 1318 live sheep were landed from Montreal and Quebec.

Obituary.

ROBERT CORY, M.D. CANTAB, F.R.C.P. LOND.

WE have briefly recorded the death of Dr. Robert Cory, which occurred on March 19th. This followed directly upon an illness of some weeks' duration only, but during the latter part of his life his health was by no means good.

Dr. Cory was a Cumberland man and was born in 1844. He received his medical education at Cambridge, at the ancient College of Pembroke, where he graduated with honours in the Natural Science Tripos of 1868. Three years later he took the degree of Bachelor of Medicine, proceeding in 1879 to the M.D. On leaving Cambridge he entered at St. Thomas's Hospital where, after a successful career as a student and as a member of the junior staff, he became assistant obstetric physician, lecturer on forensic medicine, and physician in charge of the vaccination department. Dr. Cory will be chiefly remembered for his excellent work in the last direction. For 25 years he was engaged in the practice and teaching of vaccination, the lectures which he delivered to his pupils on the subject contain masses of accurate information, while he himself fell a victim to the ardour of his scientific researches.

As far back as 1881 he was associated with Sir George Buchanan in the founding of the Government Animal Vaccine Establishment, and since that date until his death he acted as its director. He was not only a teacher of vaccination but an exceptionally expert operator. The correctness of the latter statement may be gauged from the fact that in the report of the medical officer to the Local Government Board for 1887 he was able to put on record the fact that in the case of over 38,000 primary operations with human or with calf lymph only in one instance had he failed twice at an attempt at vaccination. With the exception of this case, in which he had an opportunity of making a third attempt, he had never met with a case of true "insusceptibility." Since 1887 the number of consecutive primary vaccinations performed at the Government station by Dr. Cory, or under his auspices, has mounted up to a total of 110,728, and still without the occurrence of a single case of insusceptibility.

Dr. Cory's great enthusiasm in all matters connected with vaccination led him, about 30 years ago, to carry out a series of experiments dealing with the possibility of the conveyance of syphilis in the operation of vaccination. Believing that the results of these experiments were likely to be of service to the medical profession he did not hesitate to offer himself on the altar of science, and on four separate occasions deliberately vaccinated himself from the clear lymph, free from obvious contamination with blood, of vaccine vesicles on the arms of children who were undoubtedly suffering at the time from syphilis in active form, as shown by the presence of cutaneous eruption, snuffles, mucous tubercles, and ulcerations. On the first three occasions on which Dr. Cory thus experimented on himself no syphilitic trouble followed the inoculations, but at the fourth attempt the result was only too successful, an exceptionally severe attack of the disease having supervened, the effects of which appeared, unfortunately, to persist to a certain extent for the remainder of his life and not improbably were concerned in bringing about his death at a comparatively early age.

It was mainly in recognition of the heroic self-sacrifice involved in these investigations that the British Medical Association conferred the Stewart Prize on Dr. Cory in 1886. As typical of the natural modesty and retiring nature of the man may be mentioned the fact that on this occasion he refused to attend in person for the presentation of the prize. Among other important researches Dr. Cory carried out a long-continued series of observations on the relation of protective vaccination to the development of the vesicle, reading a paper on this subject before the Epidemiological Society in 1879. 20 years later he published a volume entitled "The Theory and Practice of Vaccination" in which he set out his more matured observations on this and other aspects of the vaccination question. This volume, the separate chapters of which represented a series of lectures which Dr. Cory was wont to deliver to his class at St. Thomas's Hospital, was

reviewed in these columns shortly after its issue, but, nevertheless, it may not be unfitting here to call attention more particularly to a series of micro-photographs forming one of the plates with which the volume is embellished. These represent sections of a small-pox vesicle, a vaccine vesicle, and a syphilitic chancre respectively, the portion of tissue from which the latter was cut having been removed from Dr. Cory's own arm at the time of his much-to-be-regretted personal experiment. The figures in this plate (No. 4) form a convincing argument in opposition to the tenets of certain members of the profession who hold that a definite relationship exists between the two diseases, vaccinia and syphilis. The careful examination of Dr. Cory's sections will at least show that those who hold this opinion cannot have studied the matter from the histological point of view or they could hardly have failed to appreciate the fact that, as pointed out by Dr. Cory, the microscopic appearances of the skin lesion in one and the other affection are absolutely distinct.

Space does not permit of reference to numerous other points in relation to vaccination investigated by Dr. Cory, but in conclusion it may confidently be affirmed that not only have his example and ready assistance greatly aided the efforts of other workers in this field, but that the results of his own personal labours have been of no little value and assistance, more particularly to the Department he faithfully served for so long a period.

HIS EXCELLENCY ROBERT HALLIDAY GUNNING, M.D., LL.D. EDIN.

ROBERT HALLIDAY GUNNING, who died on March 22nd, aged 81 years, was educated at Edinburgh and became a Licentiate of the Royal College of Surgeons of Edinburgh in the year 1839 and took the degree of Doctor of Medicine in the University in 1846. In the year 1887 the degrees M.A. and LL.D. were conferred on him. Whilst he was at Edinburgh the use of chloroform was first introduced by Sir James Simpson and Gunning was present at the first public administration of the new anæsthetic. The period of his studentship was one of great theological perturbation, for at that time Dr. Chalmers was in the ascendant, and Gunning was one of his early supporters. He continued for the rest of his life to hold strong theological views and he never ceased to care for the welfare of the University and the city of Edinburgh. In the University of Edinburgh he founded the Victoria Jubilee prizes, 11 in number, of the value of £50 each, and he showed his interest in theological and political matters by erecting in St. Giles's Cathedral a brass plate on the site from which Jeanie Geddes is traditionally supposed to have thrown a stool at the priest as a protest against the form of prayer which was being used. More recently he originated the movement which led to the erection of a memorial to the Marquis of Argyle which has been recently put up in the same cathedral.

A great part of Dr. Gunning's life was spent in Brazil where he gained the confidence of the late Emperor, who created him a Grand Dignitary of the Order of the Rose. As one of the most distinguished Britons in Brazil Dr. Gunning naturally saw the more interesting of his countrymen who visited the empire, while his country house was practically open to any Englishman who wished to visit him. Dr. Gunning was twice married but leaves no family. During the last few years of his life he was completely blind, an affliction which he bore with exemplary patience. He was an extremely hospitable man, and his death will be felt by a large number of people who always found a welcome at his house, and an eager listener to any news which they might be able to bring, for nearly to the end of his long life he took the keenest pleasure in hearing about all passing events; and although he held strong views he was always ready to hear anything which could be urged against them.

WILLIAM CHAPMAN GRIGG, M.D. EDIN., M.R.C.P. LOND.

THE death occurred on March 12th, in the hospital at Wynberg, South Africa, of Dr. William Chapman Grigg. The cause of death was enteric fever. Dr. Grigg received his education at Birmingham, Bristol, King's College, London, and the University of Edinburgh. He also studied at Vienna. He became a Member of the Royal College of Surgeons of England in 1863 and a Licentiate of the Society of Apothecaries in 1864, graduated as M.D. at the University of Edinburgh in 1870, and in 1872 became a Member of the Royal College of Physicians of London. His practice was chiefly concerned with gynæcological and obstetric work, but he held the post of joint lecturer in forensic medicine at Westminster Hospital Medical School and was also physician to the Victoria Hospital for Children at Chelsea. He was for some time obstetric physician to out-patients at Westminster Hospital and also held the posts of physician to in-patients at Queen's Charlotte's Lying-in Hospital and acting physician to the General Lying-in Hospital, York-road, Lambeth.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. J. C. de Sande Saccadura Botte, Professor of Pharmacology and Dean of the Medical Faculty of the University of Coimbra.—Dr. Decès, Professor of Clinical Surgery in the Medical School of Rheims.—Dr. G. Pacetti, *privat-docent* of Neurology in the University of Rome.—Dr. Eugen Boeckel, formerly a professor in the French Medical Faculty of Strasburg.—Dr. Oscar Widman, Extraordinary Professor of Medical Pathology in Lemberg.—Dr. Hoadley, Professor of Orthopædic Surgery in the Chicago College of Physicians and Surgeons.—Dr. Hilsmann of Neheim who is believed to be the senior medical man in Germany. He was 92 years of age.—Professor Otto Leichtenstern of Cologne whose name is known in connexion with researches on ankylostomiasis and who published a number of papers in association with Ziemssen, Gerhardt, and Nothnagel.—Dr. E. Lorenzo Holmes, Professor of Ophthalmology and Otology in the Rush Medical College, Chicago.—Dr. J. Sroczynski, *privat-docent* of Ophthalmology in the University of Cracow.—Dr. A. von Tschurtschenthaler, formerly Professor of General Pathology in Innsbruck.—Professor von Mosengeil of Bonn.—Dr. Leroy, Professor of Medical Pathology in Lille.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held in March the following candidates passed in the subjects indicated:—

Surgery.—W. F. C. Bennett (Section II.), Sheffield; R. R. P. S. Bowker, Middlesex Hospital; H. N. Collier, Guy's Hospital; R. V. Cowey (Section I.) and W. K. S. Hay-Coghlan, St. Mary's Hospital; R. C. Rumbelow, Middlesex Hospital; A. Y. St. Leger (Section II.), Cambridge and St. Mary's Hospital; and T. Young (Sections I. and II.), St. Bartholomew's Hospital.

Medicine.—W. D. French (Section I.), University College Hospital; H. Jessop (Section I.), Birmingham; W. T. Meagher, Cork; A. C. Oliver (Section II.), Charing Cross Hospital; and J. R. Pooler (Section I.), Birmingham.

Forensic Medicine.—W. D. French, University College Hospital; H. Jessop, Birmingham; W. T. Meagher, Cork; J. R. Pooler, Birmingham; and H. F. Willington, Manchester.

Midwifery.—E. F. Lamport, Royal Free Hospital; C. A. Lower, Guy's Hospital and Bristol; F. A. Segreda, Guy's Hospital; and H. P. Shanks, University College Hospital.

The diploma of the Society was granted to the following candidates, entitling them to Practise Medicine, Surgery, and Midwifery:—W. F. C. Bennett and W. K. S. Hay-Coghlan.

DRAINAGE OF PLYMOUTH.—At the meeting of the Plymouth Borough Council held on March 12th it was decided to proceed with the construction of the main sea outfall in connexion with the drainage scheme of Plymouth. The cost was estimated at about £21,000.

THE POSITION OF THE MEDICAL OFFICER OF HEALTH TOWARDS HIS AUTHORITY.—At a recent meeting of the Gloucester City Council Dr. J. Campbell stated that his report to the Local Government Board and to the local sanitary authority could not be altered by anybody. As a matter of courtesy he read it to the committee, but all the local authority had to decide was whether they would print it or not. It was subsequently stated that Dr. Campbell accepted suggestions made in committee on his report which was thoroughly considered before being ordered for printing. It was also urged that in the public interest the medical officer was protected from outside influence in the record of his opinions. A proposal to refer the minute back was withdrawn.

ROYAL INSTITUTION.—The Friday evening discourse at the Royal Institution on March 23rd was delivered by Sir Andrew Noble, the subject being Some Modern Explosives. The discourse was an elaborate exposition of the use of explosives in artillery. It was mentioned that cordite, the explosive at present employed, produced a muzzle velocity of the projectile nearly double that obtained with the powder used 40 or 50 years ago.

WEST CORNWALL WOMEN'S HOSPITAL, REDRUTH.—The annual meeting of governors and others interested in this institution was held on March 13th. The medical report stated that 127 women had been admitted during 1899 and 19 children since the opening of the children's ward last July. The financial statement showed that the income amounted to £410 and that a favourable balance of £25 remained.

HEALTH OF LAUNCESTON.—The annual report of the medical officer of health (Dr. C. G. Gibson) for 1899 states that there were 61 births, giving a rate of 14·02 per 1000; the deaths numbered 75, being a rate of 17·26 per 1000. The zymotic death-rate was 0·23 per 1000. Dr. Gibson draws attention to the astonishingly low birth-rate, and adds that a decrease of the population had to be recorded, instead of an increase as in former years. The medical officer of health further states that not a single case of typhoid fever had originated in Launceston since 1893. The new sewage works were now in good working order and giving satisfaction.

PRESENTATIONS TO MEDICAL MEN. — On March 15th Mr. Thomas Hamilton, M.B., C.M. Glasg., on the occasion of his leaving his native town, Dalry, Ayrshire, where he has successfully practised for some years, was presented by his numerous patients and friends, who appreciated his worth and medical skill, with a silver cigarette-case and a purse of sovereigns and a pearl brooch for Mrs. Hamilton.—Before leaving for the front, South Africa, Mr. William Wellington Lake, M.R.C.S. Eng., Surgeon-Lieutenant-Colonel, Militia Medical Staff Corps, was the recipient of a presentation from the officers of the Isolation Hospital, Guildford, and the clerk to the Joint Hospital. He has discharged the duties of medical officer at the hospital for some years and the subscribers desired to give him some, though small, tangible token of their esteem and regard. The presentation was made privately, on their behalf, by the superintendent of the hospital and consisted of a silver-mounted spirit cabinet.—On March 20th, at Pagani's Restaurant, Great Portland-street, W., a presentation of a gold watch and chain and silver cigarette-case was made to Dr. Major Greenwood, honorary secretary of the Brussels Medical Graduates' Association, by Dr. Danford Thomas, coroner for Central London and Middlesex, in the name of the members of that association, in recognition of Dr. Greenwood's services. Dr. Charles Burland, President of the association, was in the chair, and many other members and friends were present. The inscription on the watch is as follows: "Presented to Dr. M. Greenwood by members of the B.M.G.A., as a token of their high regard and a slight recognition of valuable services as Hon. Secretary.—March, 1900."—At the annual dinner of the students of the Durham University College of Medicine, held on March 23rd, at the Hôtel Métropole, Newcastle, Dr. F. Page was presented with a testimonial on his retirement from the post of surgeon to the Newcastle Infirmary. The testimonial consisted of a five-light candelabra and six candlesticks to match, in Corinthian design, together with three silver dessert dishes.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Lunacy Board in Scotland.

THE Bill of the Government dealing with salaries, &c., in connexion with the Lunacy Board in Scotland is likely to be keenly opposed. Strong objection is felt to the proposal to attach a salary or remuneration to the office of chairman of the Board, which until now has been an unpaid appointment.

The Sale of Undersized Fish.

The Government has introduced again a Bill to prevent the sale of immature fish. The Bill follows very closely the recommendations of the Select Committee which a few years ago inquired into the subject and obtained valuable evidence as to the wanton and wholesale destruction of undersized fish. The advocacy of the measure is in the hands of Mr. Ritchie, President of the Board of Trade.

HOUSE OF COMMONS.

TUESDAY, MARCH 20TH.

The War Office and Civil Hospitals.

SIR EDGAR VINCENT asked the Under Secretary of State for War when it would be possible to give a decided answer to the offer made on Dec. 21st last by the Royal Devon and Exeter Hospital to take in 20 sick and wounded men of the Devon Regiment on their return from active service.—Mr. WYNDHAM: There has been some misapprehension on this point and I should like, if the House will allow me, to explain it rather fully. It was apprehended that the accommodation of the military hospitals might prove insufficient for the number of invalids arriving from South Africa. A circular was accordingly sent by the War Office to the various town and county hospitals to ascertain what number of beds could, if need should arise, be assigned to military patients. Our intention is to use these beds only as a reserve when the military hospitals are full. In many cases, including the Royal Devon and Exeter Hospital, we were met by the generous offer of a number of free beds. But the military hospitals are not yet full; only about 2000 invalids have so far arrived from South Africa and many of these have already been sent on sick furlough, so that it is impossible to say when or where recourse must be had to civil hospitals. There is, however, no necessity for keeping beds vacant in any civil hospital, since we propose to give 10 days' or a fortnight's notice in every case.

THURSDAY, MARCH 22ND.

The Infliction of Corporal Punishment in Prisons.

Sir CHARLES CAMERON asked the Home Secretary whether there were any and if so what regulations providing for the special medical examination of persons sentenced to flogging as to their fitness to undergo such punishment before it was inflicted; whether the gaol surgeon or any other officer had power to suspend or dispense with such a sentence, if in his opinion the constitution of the person sentenced to flogging was not fit to bear it; and what precautions were taken and in whom was the duty vested to ascertain whether juvenile offenders sentenced to whipping were able to bear it without danger to health.—Sir MATTHEW WHITE RIDLEY: Rule 87 (Local Prisons Rules) directs that corporal punishment shall not be inflicted unless the medical officer has certified that the prisoner is in a fit condition to undergo the punishment. Rule 182 also directs that before a prisoner is subjected to corporal punishment the medical officer shall examine him and certify whether or not he is fit for the punishment. Rule 182 further directs that the instructions of the medical officer for preventing injury to health by corporal punishment shall be obeyed. These rules apply also to juvenile offenders sentenced to whipping when such whipping is carried out by the prison authorities. Whippings administered by the police are subject to similar police regulations. The rules for convict prisons contain similar provisions to those in force in local prisons with respect to convicts ordered to be flogged for prison offences.

The Boots of the Soldiers in South Africa.

Mr. POWELL WILLIAMS, answering a question on this subject addressed to him by General RUSSELL, said: The foreign service hand-sewn, steel-billed boots and the hob-nailed boots received from India and Egypt have proved satisfactory for infantry, but Lord Roberts has complained of the home pattern clump-soled boot. We have sent out in round numbers 108,000 home and 132,000 foreign pattern, and more will be sent as fast as they can be procured. The hand-sewn boot trade seems to be an expiring industry, and we are endeavouring to obtain a pattern of machine-sewn boot which shall be equally suitable for home or foreign wear.

FRIDAY, MARCH 23RD.

The Petroleum Question.

Mr. CHANNING asked the Home Secretary whether he was aware that the Public Control Committee of the London County Council had stated in their report that the decrease of fatal lamp accidents in London from 34 in 1898 to 23 in 1899 might probably be traced to the increased quantity of high-flash Russian oil now being imported into London and to the decreased use of low-flash American oils; and whether he would bring in a Bill to raise the flash-point in accordance with the public opinion thus indicated.—Sir MATTHEW WHITE RIDLEY: The report referred to has been brought to my notice, but its contents hardly appear to afford sufficient data to warrant the conclusions suggested in the question. As to legislation, I must repeat that I can give no undertaking.

The High Death-rate in Dublin: Suggested Explanation.

Mr. T. M. HEALY asked the President of the Board of Trade if his attention had been called to the published report of Professor E. Reynolds, of Trinity College, Dublin, warning the public of his discovery that the Dublin Gas Company, without notice to the citizens or the corporation, had turned 17 per cent. of carbon monoxide into their mains; did the Board of Trade receive any notice of this intermixture of water-gas with coal-gas in Dublin; was he aware that water-gas was the most deadly gaseous poison known, was absolutely fatal to animal life, and that its use as an illuminant had been made illegal in many American States; was he aware that leakages from the Dublin mains were constant and that since the introduction of water-gas the death-rate amongst the population had risen so enormously that the Lord Lieutenant had appointed a commission to investigate the cause; had he any information to show whether the poison from water-gas was cumulative in the human system and whether any remedy known to science existed for even cases of partial poisoning; and would the Government take any steps to protect the public from the admixture of this product with ordinary coal-gas.—Mr. RITCHIE: I have not seen the published report to which the hon.

and learned Member refers, but I understand that Professor Reynolds in a lecture at Trinity College recently made some observations as to the increased proportion of carbonic oxide in the gas supplied in Dublin due to the admixture of carburetted water-gas with coal-gas. The Board of Trade received no notice of the intention of the gas company to make any alteration in the nature of the gas nor are the company required to give such notice, but they have now informed the Board that the plans of the necessary works were submitted to the corporation and their purpose explained. I am not aware that the use of water-gas has been made illegal in any American State, but from the report issued last year of a Home Office Departmental Committee which inquired into the question of the supply of water-gas it appears that in the United States carburetted water-gas is very largely used and formed in 1896 about 70 per cent. of the total gas-supply. The hon. and learned Member will by a perusal of the report obtain much information with reference to this interesting subject which it is impossible to summarise in an answer to his question. The Local Government Board for Ireland inform me that they are not aware whether the high death-rate is in any degree attributable to the alleged leakage of gas. The commission appointed by the Lord Lieutenant has directed its inquiries into the general causes of the death-rate, and pending the report of the commission that Board can express no definite opinion on the point.

MONDAY, MARCH 26TH.

A Guy's Hospital Case.

Mr. CHANNING asked the Home Secretary whether his attention had been called to the evidence given at a coroner's inquest at Bermondsey on Friday, March 15th, on an infant named Mabel Blanch, that the child was seen and prescribed for by an unqualified student at Guy's Hospital, and subsequently died; and whether he would make a representation to the authorities of Guy's Hospital that effect should forthwith be given to the rider of the jury that patients should in every case be examined by a qualified medical man and a record kept of the prescriptions.—Sir MATTHEW WHITE RIDLEY: I find that the facts are as stated in the question, except that the jury do not appear to have believed that any prescription was given. I am assured by the authorities of Guy's Hospital that it is entirely against the regulations for unqualified students to treat patients on their own responsibility, and that on the day following the child's death the case was brought before them and the student dealt with by them.

London Telegraphists and Medical Attendance.

Mr. M'GHEE asked the Secretary to the Treasury, as representing the Postmaster-General, whether London telegraph clerks were entitled to free medical attendance, and whether the official doctors' officers visit patients who could not leave their homes; and whether the Postmaster-General would take steps to make adequate provision for giving the London telegraphists free medical attendance, in accordance with the statement made in the Parliamentary Return issued on the motion of the member for the Blackfriars Division of Glasgow in 1895.—Mr. HANBURY: There are no persons called telegraph clerks in London. The London telegraphists whose salaries are not over £160 a year are allowed free medical attendance at their offices or at their homes provided that the homes are within the prescribed limit of three miles from the head office of the district in which they are employed. If they reside beyond this limit they are entitled to receive advice and medicine on application at the surgery of the medical officer.

WEDNESDAY, MARCH 28TH.

Corporal Punishment.

At this sitting the House debated a Bill to consolidate the law with regard to corporal punishment and to give Her Majesty's judges and chairmen of Quarter Sessions power to order it in certain cases of violence towards women and children. The HOME SECRETARY and other prominent Members opposed the Bill as a retrograde step, and the House rejected it by 195 votes to 72.

THE MIDWIVES BILL.

PASSAGE THROUGH THE STANDING COMMITTEE.

The Midwives Bill has passed through the Standing Committee of the House of Commons on Law and now awaits the report stage. Its position, therefore, is one of great advantage, and, indeed, the medical profession may reckon on the Bill becoming an Act before the close of the session. The proceedings in the Standing Committee occupied two days, and while they were marked by great zeal and activity on the part of the promoters and their friends, the same cannot be said of the critics of the Bill or of those to whom they naturally looked for assistance and encouragement. The small space in the rear of the hall allocated to the public was crowded with ladies and gentlemen prominently identified with the movement for this class of legislation and from time to time members of the Committee interested in the passage of the Bill came to them, if not for instructions, at any rate for aid in the conduct of their case. No such aid appeared to be available for the other side. On the Committee itself there were few medical members, only Dr. Ambrose and Sir George Pilkington. The latter attended the first day and moved a number or amendments, but the former put in an appearance on neither occasion. Apart from Sir George Pilkington most of the criticism of the Bill was done by Mr. Lloyd-George and Mr. T. P. O'Connor, who showed a very keen and intelligent appreciation of its tendencies.

PROCEEDINGS IN THE HOUSE.

THURSDAY, MARCH 22ND.

After midnight at this sitting the House went into Committee "to consider of authorising the payment out of moneys to be provided by Parliament of such expenses as the Treasury may certify to have been necessarily incurred by the General Medical Council under any Act of the present session to secure the better training of midwives and to regulate their practice."

Mr. T. M. HEALY took exception to the subject being discussed now when the Bill itself had not been considered by the Standing Committee. He thought it was a strong thing to assume that the Standing Committee would pass the Bill and pass it in a shape which would require a money vote for the General Medical Council. It would, in his opinion, be much more satisfactory to wait and see what was done with the Bill in the Standing Committee.

Sir JOHN GORST, who had charge of the business, said this was merely a formal proceeding rendered necessary by the fact of money being required to carry out the Act. The Bill in question was a measure about which there had been a great deal of negotiation and an agreement had been come to that certain small expenditure which would be borne by the General Medical Council should be met by the Government. The private Members who promoted the Bill could not possibly move such a resolution as this, and he as a representative of the Government was moving it in order to carry out the agreement come to. It would be for the House to discuss the proposal in Committee and afterwards on report.

Mr. HEALY said that while he did not wish to interfere with any arrangement come to he felt that any action taken now would prejudge the case. In the Standing Committee it might be said that the House had already voted, and voted cheerfully, this money.

Mr. DALY expressed the opinion that it would be a bad precedent.

The CHAIRMAN asked the hon. Member whether he objected to the resolution being taken.

Mr. DALY replied in the affirmative.

According to the rules of the House, it being after midnight and objection being taken, the business stood adjourned.

PROCEEDINGS IN THE STANDING COMMITTEE.

FRIDAY, MARCH 23RD.

The Standing Committee on Law of the House of Commons met today, with Mr. LAWRENCE HARDY in the chair, and proceeded with the consideration of the Bill.

Clause 1 as printed said "this Act may for all purposes be cited as the Midwives Act, 1900. It shall come into force on the first day of April, 1901."

Mr. T. P. O'CONNOR, on behalf of Mr. LLOYD-GEORGE, moved to leave out "midwives" and insert "midwifery nurses." The members of the Committee, he said, were aware that the main objection of the medical profession, or at any rate of the great majority of that profession, was that this measure would transform the midwife and give her all the privileges of a medical man, and the purpose of this amendment was to make it clear that midwives were nurses and not medical practitioners.

Mr. HEYWOOD JOHNSTONE, the Member in charge of the Bill, said that if he and his friends were to accept this amendment the whole character of the measure would be altered. He would not occupy the time of the Committee with argument, but simply say that the term "midwife" was well understood and that in his opinion the fears of the hon. Members were groundless.

Dr. COMMINS, supporting the amendment, said that in the public mind there would be confusion as between the medical man qualified after long study to practise midwifery, as well as medicine and surgery, and the midwife certified under this Act. In these circumstances he regarded the amendment as absolutely necessary.

Mr. HAZELL submitted that the danger apprehended by the movers of the amendment was sufficiently safeguarded by Section 4, where the Central Midwives Board was directed to make rules regulating, supervising, and restricting within due limits the practice of midwives.

Mr. LLOYD-GEORGE said that the Bill in its present shape made a serious alteration in the law. The state of the law was that no unqualified practitioner could practise midwifery. Even the qualified practitioner could not employ an unqualified doctor, no matter how great the experience of the latter in midwifery cases, to assist him in his work. If the qualified practitioner did so he was liable to be dismissed from the profession for infamous conduct in a professional respect. Such cases had occurred in the mining districts of Wales and the medical men concerned had been removed from the Medical Register. According to this Bill they denied to the unqualified doctor, no matter how great his experience, what they allowed to a midwife with two or three months' training. That was surely a mistake. Indeed, he thought it an absurdity that midwives should be allowed to act as responsible members of the medical profession, and he considered the committee would do well to confine the operations of these women to midwifery nursing. If this Bill were passed then the women in the mining districts of Wales who were now attended by qualified medical men would be attended by midwives registered and certified under this Bill. He thought that very unfair, and he should like to know whether the fashionable ladies who promoted this Bill would like to have the experiment tried upon them. For himself he objected to the experiment being tried upon the humbler classes of the community.

Sir GEORGE PILKINGTON thought it was the duty of Parliament to guard the poorer portion of the community against any possibility of misunderstanding in these matters. He thought, too, that the different classes of nurses should be distinguished.

Mr. VICARY GIBBS said that this was a Bill dealing with midwives and he could not conceive why they should call the people concerned by any other name than midwives. Manifestly those who moved this amendment attacked the principle of the Bill.

Mr. GEORGE HARWOOD took the view that as they were creating a new class of persons it was perfectly right and logical that they should give them a new name. The name "midwife" suggested a person not very capable, whereas these persons were to be properly trained, and he thought in their own interests they should have a name making it clear that they were duly qualified for their work.

Mr. HEYWOOD JOHNSTONE denied that the Bill created a new class of persons. It simply provided that the existing class known as midwives should have some training and show some evidence of competence before carrying on the profession. He thought the report of the Select Committee showed that medical men had nothing whatever to fear from the competition of these women. Trained women knew when they needed the assistance of the medical man and would send for him, and by having trained women, and trained women only, much suffering would be spared.

Sir GEORGE PILKINGTON said that the medical profession did not for one moment fear competition. What they did fear was that poor women would not receive proper skilled attention in their time of trouble.

The amendment was then put to the Committee and rejected by 20 votes to 5.

Clause 2 in the Bill was in the following terms, viz:—

2.—(1) From and after Jan. 1st, 1902, no woman shall be entitled to take or use the name or title of midwife (either alone or in combination with any other word or words), or any name, title, addition, or description implying that she is certified under this Act, or is qualified to act as a midwife, unless she be certified under this Act.

(2) Any woman who, after Jan. 1st, 1902, not being certified under this Act, shall take or use the name of midwife or any other such name, title, addition, or description as aforesaid, or shall habitually and for gain attend women in childbirth, shall be liable on summary conviction to a fine not exceeding £5.

(3) No woman shall be certified under this Act until she has complied with the rules and regulations to be laid down in pursuance of the terms of this Act.

(4) No woman certified under this Act shall employ as her substitute, or assistant, an uncertified person.

(5) The certificate under this Act shall not confer upon any woman any right or title to be registered under the Medical Acts or to assume any name, title, or designation implying that she is by law recognised as a medical practitioner, or that she is qualified to grant any medical certificate or any certificate of death or of stillbirth, or to attend cases of abnormal labour, or of disease of, or danger to, the mother or the child.

On the motion of Colonel MILWARD it was agreed to alter the date from Jan. 1st, 1902, to Jan. 1st, 1903.

Colonel MILWARD moved to amend the second sub-section so as to read: any woman who, &c., shall take or use the name of midwife or any other such name, title, addition, or description as aforesaid *and* shall habitually and for gain, &c. He said he was not prepared to go so far as to say that no person except a registered midwife should be called in, and the object of his amendment was to prevent the entire wiping out of poor women who in rural districts gave assistance to lying-in women.

Mr. HEYWOOD JOHNSTONE said he had great sympathy with the object of his hon. friend which he understood to be to protect the rights of poorer women practising in villages to attend upon their neighbours at necessary times, and if any amendment could be suggested which would make that absolutely clear it would have from the promoters of the Bill their most anxious and most benevolent consideration. Women engaged at the present time in practice were protected by Clause 3 which dealt with persons in *bond-fide* practice and bearing satisfactory character.

Mr. HELDER said that it was obvious that the clause in its present form would cut out a large number of persons who at the present moment were doing good work and therefore he should like to see it amended.

Mr. VICARY GIBBS expressed the view that this amendment if passed would knock the bottom out of the Bill. It would destroy what the strongest opponents of the measure recognise as its chief merit. Everybody desired that the poor should be protected from incompetent quacks and whatever might be the wishes of the mover of the amendment the effect of what he proposed would be to leave them at the mercy of these quacks. Therefore he hoped the amendment would not be pressed.

Colonel MILWARD explained that he considered the Bill too drastic in its present shape, but as the hon. Member in charge of the Bill had kindly said he would accept an amendment to carry out what he had in view——

Mr. HEYWOOD JOHNSTONE: Benevolently consider.

Colonel MILWARD: Benevolently consider; quite so—he was willing to withdraw the amendment.

Mr. T. P. O'CONNOR said that his position was not to weaken the qualifications of midwives but to strengthen them. He thought it could be shown that if this amendment were carried an unqualified woman could very often practise midwifery if only she avoided calling herself a midwife, and that surely was a fatal objection to the amendment. Yet at the same time the promoters of the Bill must know that if the measure passed in its present form a large number of women who had done this duty as an act of neighbourliness and sometimes perhaps as a small addition to their means would be excluded. He would ask his hon. friend (Mr. Heywood Johnstone) to consider this and endeavour to meet the case. It was demanded that lying-in women should be attended only by a skilled midwife. If they had battalions of skilled midwives ready to spread themselves through all the villages of the country he could understand the Bill, but such was far from being the case. There must be a very considerable interval before they could have this strength of skilled midwives, and he thought his hon. friend should come forward with some practical proposal and not be content with benevolent consideration.

The amendment was then withdrawn.

Mr. LLOYD-GEORGE moved to substitute "authorised" for "qualified" in sub-section 5 of the clause.

Sir GEORGE PILKINGTON said that the word "qualified" was calculated to deceive. It applied to a degree in a medical school and he did not think it should be used in connexion with this Bill at all.

The Committee agreed to the proposed alteration.

Colonel MILWARD moved to leave out all after the word "still-birth" in sub-section five and to insert "and she shall apply for qualified medical assistance in every case which presents abnormality, danger or disease on the part of the mother or of the new-born child."

Mr. HEYWOOD JOHNSTONE said he was afraid that again he could not accede to the wishes of his hon. friend. If this matter was to be provided for at all it should be provided for in the rules made for the guidance of midwives by the Central Midwives Board. He strongly objected to placing upon one particular class of persons in the kingdom a statutory responsibility to send for medical assistance at this particular juncture. If these women were properly trained, as this Bill sought to ensure, then they would know when to send for medical assistance. But why should they put upon them by statute an obligation which they put upon no one else in the community?

The amendment was withdrawn without further debate.

Mr. LLOYD-GEORGE moved to insert at the end of the clause the following words, viz.: 'And if any woman certificated under this Act shall do or purport to do anything which by this sub-section it is declared that her certificate does not confer upon her a right or title to do, she shall be liable on summary conviction to a fine not exceeding £5."

Mr. ARTHUR ELLIOT said it appeared somewhat hard that a woman should be penalised in the manner proposed if when trouble suddenly arose she endeavoured to the best of her ability to deal with it.

Mr. VICARY GIBBS said it might be necessary at a moment's notice for a midwife to do something in order to save life which would not be her duty in ordinary circumstances. Did the opponents of the Bill mean that she was to leave her patient to die, though measures for her preservation were quite within her power?

Mr. LLOYD-GEORGE said it appeared to him that the speeches to which the Committee had just listened indicated what was the real object of the promoters of the Bill. It was intended to set up a perfectly new profession. The Bill proposed to register women who were really nurses and it was obvious that the promoters contemplate that these women should be a separate profession which was not recognised nominally by the Bill. That went to the very root of his objection to the Bill and he thought the promoters had given away their case. He would press the matter now and if he were defeated he would press it again in the House of Commons.

Mr. PARKER SMITH thought the hon. Member hardly realised the meaning of his amendment. The amendment proposed that if a woman did anything which her certificate did not empower her to do she should be liable to a penalty. She might go to a confinement which was expected to be normal. It turned out to be abnormal and she sent for a doctor. Before the doctor arrived it became absolutely necessary that she should do something and if she did anything she became liable to this penalty. This happened if she were an authorised person. But if she were an unauthorised and uncertificated person she was liable to no such penalty and might do what she liked.

Mr. LLOYD-GEORGE said that the point was whether the woman represented that she was authorised to do the thing. If she represented that her certificate authorised her to do the thing when such was contrary to the fact then he certainly thought she should be punished.

Mr. ATHERLEY-JONES said this amendment was obviously intended to make as difficult as possible the benefits aimed at under this Bill. It was an amendment framed in the interests of the medical profession and he hoped the Committee would not accept it.

Mr. LLOYD-GEORGE asked whether the promoters of the Bill would accept an amendment which simply covered false representation.

Mr. VICARY GIBBS intimated that he for one would accept such an amendment.

Mr. T. P. O'CONNOR said he felt there was great force in the case presented by Mr. Parker Smith, but while that was so he thought there was a matter here which the promoters of the Bill ought to consider. The objection of the opponents of the measure was that these midwives were not to be midwives and nurses, but medical practitioners with all the rights of medical practitioners. It was quite true that a woman was not, under her certificate, authorised to attend a case of abnormal labour or of disease of, or danger to, the mother or the child, but the illustration given by Mr. Parker Smith showed that though she was not authorised the woman might do it. Where, then, was the protection? There ought surely to be some safeguard. At the very least it ought to be put upon the midwife to prove that there was danger to mother or child when she interfered. If the promoters did not put in some proviso then they proved the whole case of the opponents that these midwives were not merely doing ordinary midwife and nursing work, but were assuming all the privileges and duties of medical practitioners.

The SOLICITOR-GENERAL (Sir ROBERT FINLAY) said that while he understood what the mover of the amendment meant he did not think that the words he had proposed brought out his meaning and he suggested that in the meantime the amendment should be withdrawn, leaving the matter to be dealt with in the House on the Report stage of the Bill.

Mr. T. P. O'CONNOR thought the Committee should have a declaration from the promoters of the Bill as to what they were prepared to do in this connexion.

Mr. HEYWOOD JOHNSTONE said that his view was that the Committee was now in a position to take a division upon the amendment unless it were withdrawn. The amendment referred to a woman certificated under the Act and Clause 4 provided for the making of rules "regulating, supervising, and restricting within due limits the practice of midwives." A rule made under this clause would, he thought, amply meet all the difficulties and anxieties raised by hon. Members.

Mr. PARKER SMITH said he certainly objected to a midwife holding out that she was capable of dealing with abnormal cases. He should like to know whether under the general law a woman dealing with dangerous cases would be in the same position whether licensed or unlicensed, assuming she could not plead emergency and assuming she had had ample notice and did not send for a doctor. He should like to ask the Solicitor-General whether it was necessary to have a special penalty for such a case.

The SOLICITOR-GENERAL replied that he did not think the existing law would deal with this case unless provision were made for it. This matter, however, might be provided for in a rule for the practice of midwives. A rule in stringent terms might be framed providing that any registered midwife who held herself out as qualified to do that which she was not authorised to do, might have her certificate withdrawn. Perhaps the promoters of the Bill would consider the point.

At the request of Mr. LLOYD-GEORGE the amendment was withdrawn.

The Committee then proceeded to the consideration of Clause 3, the terms of which were as follows, viz:—

3. Any woman who, within two years from the date of this Act coming into operation, claims to be certified under this Act shall be so certified provided she holds a certificate in midwifery from the Royal College of Physicians of Ireland or from the Obstetrical Society of London, or such other certificate as may be approved by the Central Midwives Board, or produces evidence satisfactory to the Board that at the passing of this Act she has been in *bond-fide* practice as a midwife and that she bears a good character.

Sir GEORGE PILKINGTON moved to insert after "provided" the words "that she bears a good character and that."

Mr. HEYWOOD JOHNSTONE hoped the hon. Member would not press this amendment because it really cast a slur upon the two bodies whose

certificates under the Bill were to be accepted as sufficient for the qualification of existing midwives.

The amendment was not pressed.

Sir GEORGE PILKINGTON moved to leave out the reference to the Royal College of Physicians of Ireland and the Obstetrical Society of London and make the clause simply run: Provided she holds a certificate in midwifery approved by the Central Midwives Board, &c.

Mr. HEYWOOD JOHNSTONE said that the certificate of the Obstetrical Society would cease to exist after the passing of this legislation. Since 1872 the society had been engaged in the voluntary work of examining women who wished some certificate or qualification and he thought it would be a somewhat ungracious thing to withhold recognition of this work.

The amendment was rejected without a division.

The Committee then took up Clause 4, viz.:—

4. On the passing of this Act the President of the General Medical Council shall take steps to secure the formation of a Central Midwives Board which shall consist of—

(1) Four registered medical practitioners, one to be appointed by the Royal College of Physicians of London, one by the Royal College of Surgeons of England, one by the Society of Apothecaries, and one by the Incorporated Midwives Institute;

(2) Two persons (one of whom shall be a woman) to be appointed for terms of three years by the Lord President of the Council; and

(3) One person to be appointed for a term of three years by the Association of County Councils.

After two years from the date of this Act coming into operation the members appointed under subsection (1) shall retire but shall be eligible for re-appointment annually. Any vacancy occurring by resignation or death shall be filled up in the case of a member appointed under subsections (1) and (3) by the body which appointed him, and in the case of a member appointed under subsection (2) by the Lord President of the Council.

The duties of the Board shall be as follows:—

I. To frame rules, subject to the approval of the General Medical Council,

(*a*) regulating the issue of certificates and the conditions of admission to the roll;

(*b*) regulating the course of training and the conduct of examinations;

(*c*) regulating the admission to the roll of women already in practice as midwives at the passing of this Act;

(*d*) regulating, supervising, and restricting within due limits the practice of midwives;

(*e*) deciding the conditions under which midwives may be suspended from practice;

II. To appoint examiners;

III. To decide upon the places where, and the times when, examinations shall be held;

IV. To publish annually a roll of midwives who have been duly certified under the Act;

V. To decide upon the removal from the roll of the name of any midwife for disobeying the rules and regulations from time to time laid down under this Act by the Central Midwives Board, or for other misconduct, and also to decide upon the restoration to the roll of the name of any midwife so removed;

VI. To issue certificates.

And generally to do any other act or duty which may be necessary for the due and proper carrying out of the provisions of this Act.

On the motion of Sir GEORGE PILKINGTON it was agreed to strike out the words "the President of" in the first sentence of the clause.

Sir GEORGE PILKINGTON moved to make the first subsection read: "Four registered medical practitioners to be appointed by the General Medical Council as follows: one practising in the London and South-Eastern Registration Divisions, one practising in the South-Western, West Midland, or Welsh Registration Divisions, one practising in the Eastern, North Midland, or South Midland Registration Divisions, and one practising in the Yorkshire or Northern Registration Divisions, as from time to time defined by the Registrar-General." Sir George Pilkington explained that the object of his amendment was to secure for the Central Midwives Board thoroughly representative general practitioners rather than men who occupy distinguished positions as consultants and specialists, believing as he did that the former were the better fitted for the work to be done.

Mr. HEYWOOD JOHNSTONE said he saw nothing in this amendment which would favour the rank and file of the medical profession.

The amendment was withdrawn without further discussion.

Mr. ATHERLEY-JONES moved the omission of the words "subject to the approval of the General Medical Council." No doubt, he said, there was great opposition to this measure by a considerable number of practising medical men and the reason for that opposition was founded upon the idea that by establishing under the sanction of Parliament a class of certificated midwives the humbler classes of the community would avail themselves of these registered midwives in preference to the ordinary medical practitioner, and therefore the object of a very large section of medical men was to try to impose as many restrictions and difficulties——

Several Members: No, No.

Mr. ATHERLEY-JONES: I have had many communications with medical men in many parts of the country—to try to impose as many restrictions and difficulties as possible in the way. The Bill provided for the formation of a Central Midwives Board and the constitution of that Board provided that there should be four registered medical practitioners, two persons who would probably be medical men appointed by the Lord President of the Council, and one person who might be a medical man appointed by the Association of County Councils. It seemed to him that such a body ought to be perfectly fitted for the purpose of framing rules without the assistance of the General Medical Council, and he could not see why there should be a sort of *imperium in imperio* in such a matter. It had been pointed out to him that by making these rules subject to the General Medical Council they might have possibly vexatious, and at any rate restrictive, rules and regulations which would tend much to discourage the employment of midwives. There could not be the slightest doubt that to the working classes of this country it was a great boon to be able to get that cheap and effective medical assistance which was provided by a midwife in contradistinction to a medical man.

Mr. HEYWOOD JOHNSTONE said that the promoters could not accept this amendment. All throughout it had been a condition that any rules should be made subject to the approval of the General Medical Council. After the assistance the promoters had received from the General Medical Council they could not in honour throw them over in the manner proposed.

Sir GEORGE PILKINGTON said he felt sure that the General Medical Council would be able to give excellent advice to the proposed board. He greatly regretted that the hon. Member (Mr. Atherley-Jones) had found it necessary to impute to the medical profession so low a motive in this matter as to oust the midwife. The medical profession were only anxious that poor women should have skilled attendance, the value of which their education and training in medicine, surgery, and midwifery enabled them to appreciate.

Mr. ATHERLEY-JONES said that after what had fallen from the Member in charge of the Bill he would not press the amendment.

The amendment was accordingly withdrawn.

Mr. LLOYD-GEORGE moved to insert in the subsection dealing with removal from the roll these words: "And so that for the purposes of this Act the omission to summon a registered medical practitioner in a case of abnormal labour shall be deemed to be misconduct."

The hon. Member said that his object in moving this amendment was to have it made clear that it was the duty of midwives to send for a medical man in abnormal cases and that if they failed to do so it was at their own peril.

Mr. HEYWOOD JOHNSTONE said it appeared to him that it would be an unfortunate thing to fix a statutory responsibility upon midwives which could, he believed, very easily be fixed by rule. The rules to be framed would naturally specify the occasions upon which the midwife was to send for medical assistance.

Mr. LLOYD-GEORGE said that in this matter he was rather inclined to agree with the hon. Member and he would withdraw his amendment.

Sir GEORGE PILKINGTON moved to insert the following additional subsection, viz.: "VII. At the discretion of the Board to inspect or cause to be inspected from time to time any premises wherein any woman receives or proposes to receive as a midwife a pregnant or lying-in woman, and if such premises shall, in the opinion of the board, be fit for the reception of a pregnant or lying-in woman the Board shall issue a certificate to that effect upon payment by the midwife of such fee as may be fixed by the Board, and shall enter such premises upon a register to be kept by the Board."

Mr. PARKER SMITH said he scarcely saw how this would fit in with the other functions of the Board.

Colonel MILWARD suggested that the power might be given to the local supervising authority.

Sir FRANCIS POWELL, supporting this suggestion, said he did not see how the Central Board in London could discharge this duty.

Mr. WARR appealed to the promoters of the Bill to give this important matter their serious consideration.

Mr. HEYWOOD JOHNSTONE replied that the matter would most certainly be considered by them and they would be happy to receive any suggestions.

The SOLICITOR-GENERAL said it might be well to consult the Local Government Board.

Meantime the amendment was withdrawn.

Clause 5 was passed by the Committee in the following amended form, viz.:—

5. There shall be payable by every woman presenting herself for examination or certificate such fee as the Central Midwives Board may, with the approval of the General Medical Council, from time to time determine, such fee not to exceed the sum of one guinea. All such fees paid by existing midwives and by candidates for examination shall be paid to the Central Midwives Board. The said Board shall devote such fees to the payment of expenses connected with the examination and certificate and to the general expenses of the Board. The Board shall, as soon as practicable after the 31st day of December in each year, publish a financial statement made up to that date and certified by a chartered accountant as correct, showing the receipts and expenditure, including liabilities, of the Board during the year. The Board may apportion between the councils of the several counties and county boroughs any balance against the Board shown in the financial statement in proportion to the number of midwives licensed during the year to practise in those areas respectively, and may recover from the councils the sum so apportioned.

Mr. LLOYD-GEORGE moved to add to the clause the words: "The general expenses of the Board shall include the payment to the members thereof of remuneration for their services and reasonable travelling expenses upon such a scale as may be approved by the Treasury."

The SOLICITOR-GENERAL intimated that the Treasury objected to this addition.

Mr. LLOYD-GEORGE said that at present there was no machinery at all in the Bill to fix the expenses.

Mr. HEYWOOD JOHNSTONE said the intention of the promoters was that the Board should be an unpaid board. The promoters had taken the matter carefully into consideration. They were told that it would be more acceptable to the profession if they had an opportunity of doing honourable and valuable service of this sort without any possibility of its being thrown in their teeth that they desired to be paid for it.

The amendment was rejected by 20 votes to 4.

Clause 6, giving power to county councils to contribute towards making good any deficiency in the funds of the Board, was postponed.

Clauses 7 and 8, dealing respectively with the midwives roll and the appointment of a secretary to the Board, were passed without debate.

The Committee then proceeded to the consideration of Clause 9 which ran as follows in the Bill as printed, viz.:—

9. Every county council or council of a county borough throughout England and Wales shall, on the date of this Act coming into operation, constitute the local supervising authority over midwives within the area of the said county or county borough. It shall be the duty of the local supervising authority—

1. To issue licences.

2. To exercise general supervision over all midwives practising within the prescribed area in accordance with the rules to be laid down under the provisions of this Act.

3. To investigate charges of malpractice, negligence, or misconduct on the part of any midwife practising within the district, and should

a *prima facie* case be established to report the same to the Central Midwives Board.

4. To suspend any midwife from practice, in accordance with the rules to be laid down by the Central Midwives Board and approved of by the General Medical Council, if such suspension appears necessary to prevent the spread of infection.

5. To report at once to the said Board the name of any midwife practising in the district convicted of a misdemeanour or felony.

6. During the month of January of each year to supply the secretary of the Central Midwives Board with the names and addresses of all midwives practising in the district and to keep a current copy of the midwives roll accessible at all reasonable times for public inspection.

7. To report at once to the Central Midwives Board the death of any midwife or any change in the name or address of any midwife in the district so that the necessary alteration may be made in the roll.

Mr. LLOYD GEORGE moved to strike out of the first sentence the word "constitute" and insert "appoint a committee of not fewer than three registered medical practitioners, not teachers or examiners of midwives, as." He thought it was obvious that for this purpose they should have a medical committee.

Mr. ATHERLEY-JONES said this amendment clearly demonstrated what he had said, that there was an attempt on the part of a few members of this Committee to so restrict the operation of the Act as to make midwives unable to really serve a useful purpose. This amendment was designed to put the midwives under the control of a rival body of persons in the same county. He said so advisedly. He had received numerous representations by medical men that the result of passing this Bill would be to cause midwives to be employed in preference to medical men. He hoped that the promoters of the Bill would resist this amendment. He really felt, in spite of what had been said by Sir George Pilkington, that he (Mr. Atherley-Jones) was amply justified in the observations he made as to the considerations which operated in this matter.

Colonel MILWARD said he should be prepared to support a proposal that one member of the authority should be a medical man.

Mr. PARKER SMITH thought they might leave the matter to the discretion of the county council.

Sir GEORGE PILKINGTON said he felt sure the county council would not leave out of account medical representation.

Mr. HEYWOOD JOHNSTONE thought they could trust to the good sense and practical working of the county council. He could not associate himself with the somewhat ungenerous remarks of the hon. Member (Mr. Atherley-Jones) about the conduct of the medical profession. While honestly putting forward their views the medical profession had given the promoters of the Bill the greatest possible assistance.

Mr. VICARY GIBBS said he had conversed with many medical men on the subject and he had not found amongst them any hostility to the Bill. As for himself, he was supporting the Bill because he thought it was in the interests of the very poor and not with the slightest feeling of hostility to the medical profession.

Several Members expressed difficulty about the meaning of the word "constitute" in the clause.

The CHAIRMAN suggested that it would facilitate debate if he put from the chair the question that "constitute" stand part of the clause.

This question was put and the Committee decided that the word should be removed from the clause.

The SOLICITOR-GENERAL suggested that the best way of meeting the opinion of the Committee would be to say that the county council should be the authority and to insert words to the effect that the county council might appoint a committee not necessarily consisting of members of the county council.

This suggestion commended itself to the Committee and was adopted, Mr. Lloyd-George's amendment being withdrawn.

A proposal by Colonel MILWARD for the framing of a scale of charges for midwives was not passed.

The Committee then adjourned until Tuesday.

PROCEEDINGS IN THE HOUSE.

FRIDAY, MARCH 23RD.

At ten minutes before midnight the House again went into committee on the resolution for making good to the General Medical Council any expenses necessarily incurred under the proposed legislation. Mr. DALY expressed objection to the resolution being passed and in Parliamentary phrase "talked it out"—that is to say, continued speaking until midnight, when by the rules of the House the debate stood adjourned.

PROCEEDINGS IN THE STANDING COMMITTEE.

TUESDAY, MARCH 27TH.

The Standing Committee held another meeting to-day, with Mr. LAWRENCE HARDY in the chair, and completed the consideration of the Bill. There was some delay at the start owing to the absence of the necessary quorum, but once the 20 members had been got together the proceedings only occupied three-quarters of an hour.

On Clause 9 dealing with the local supervision of midwives

Mr. HEYWOOD JOHNSTONE explained that as the clause stood it proposed that it shall be the duty of the local supervising authority during the month of January of each year to supply the Secretary of the Central Midwives Board with the names and addresses of all midwives practising in the district. He moved to alter the clause so as to provide that the licence shall be taken out in the month of January each year and that the names and addresses shall be sent in during the following month—namely, February.

The clause was amended in this sense.

Mr. WARR moved to insert words providing that "it shall be lawful for the local supervising authority to make from time to time any such order as to them seems fit for prescribing and regulating the remuneration of midwives practising in the district."

Sir FREDERICK GODSON said he thought the remuneration of midwives should be left to the operation of the laws of supply and demand and not fixed by the local supervising authority.

Mr. BONSOR spoke of the proposal as a retrograde step, as almost going back to the days when the price of bread was regulated by some constituted authority. He felt sure that in the towns competition would practically settle the scale of charges, while in country villages there would always be someone who would see that the people were not overcharged.

Sir FREDERICK GODSON said that only on Saturday he was speaking to one of the medical men in his district who was a very strong supporter of the Bill generally, but who was certain that in the opinion of the medical profession in the district such a clause as this would do more harm than good.

Mr. VICARY GIBBS condemned the proposal as an extension of a mischievous principle.

Colonel MILWARD thought it was absolutely necessary that in the small villages poor women should have some protection against extortionate charges.

Mr. HAZELL hoped the amendment would not be pressed. He feared that in the case of a supervising authority whose opinion was that this work should be done, not by midwives but by medical men, the charges would be made so high that poor people would not be able to pay for midwives.

The amendment was rejected by 19 votes to two.

Mr. HEYWOOD JOHNSTONE moved to insert "the local supervising authority may delegate, with or without any restrictions or conditions as they may think fit, any powers or duties conferred or imposed upon them by or in pursuance of this Act, to a committee appointed by them and consisting either wholly or partly of members of the council, and the provisions of sub-sections one and two of section 52 of the Local Government Act, 1888, shall apply to every committee appointed under this section and to every council appointing the same."

The hon. Member explained that this provision was taken from the Parish Councils Act of 1894. He had not specified any particular class of physicians or otherwise from whom the coopted members might be drawn. He thought they could very safely leave that to the good judgment and discretion of the county councils who knew what material they had available for the work. The provisions mentioned in the latter part of the amendment had reference to machinery, the necessary quorum, place of meeting, chairman, and other details.

Mr. PARKER SMITH asked whether the provision would enable women to serve upon the committee.

The SOLICITOR-GENERAL (Sir ROBERT FINLAY) said the point might be argued and therefore it would be better to put in express words.

The Committee agreed to insert "provided that women shall be eligible to serve upon such committees" and with this addition the amendment was adopted.

Colonel MILWARD suggested that some limit should be placed on the size of the committees.

Mr. HEYWOOD JOHNSTONE said he would not object to some limitation.

Sir FRANCIS POWELL thought it would be better to leave the limit to the discretion of the council.

The Committee endorsed this view.

Clause 10 proposed that a county council may delegate with or without any restrictions or conditions as they may think fit any powers or duties conferred or imposed upon them by or in pursuance of the Act to any district council within the area of the county.

On the motion of Mr. HEYWOOD JOHNSTONE it was agreed to add: "And the powers and duties so delegated may be exercised by a committee appointed by such district council and consisting either wholly or partly of members of the district council." And on the motion of the SOLICITOR-GENERAL to further add: "Any expenses incurred by a district council in the execution of any powers or duties so delegated shall, to an amount not exceeding such sum as may be prescribed by the county council, be repaid to such district council as a debt by the county council. Any excess above the sum so prescribed shall be borne by the district council as part of their ordinary expenses. The provisions of this section shall apply to the administrative county of London in like manner as if each metropolitan borough were a county district and the borough council were the district council of that district."

In Clause 11, dealing with the midwives' licence, amendments were made to provide that the licence shall run until the end of January, giving the woman the whole month in which to take out the new licence.

Clause 12, which provides penalties, was altered, and instead of making the offence of an unlicensed woman attending a patient a misdemeanour it was made a summary offence.

On the notice paper the following amendment stood opposite the name of Sir George Pilkington, viz.: "Any woman, whether certified or licensed under this Act or not, who after the first day of January, 1902, shall receive as a midwife, a pregnant or lying-in woman in premises which shall not have been certified by the Board as fit for the reception of such a woman under the provisions of this Act shall be guilty of a misdemeanour, and on conviction on indictment shall be liable at the discretion of the court to a fine not exceeding £10, or to imprisonment for any term not exceeding two months with or without hard labour, or to both fine and imprisonment, or on summary conviction to a fine not exceeding £10."

Sir George Pilkington was not present and accordingly the amendment was passed over.

Clause 13, providing a penalty for wilful falsification of the roll, was agreed to without discussion, and Clause 14, which deals with the prosecution of offences, was amended in regard to certain details. The wording of Clause 15, giving an appeal to the Privy Council in case of disagreement between the General Medical Council and the Central Midwives Board, was also slightly amended, while Clause 16, "Nothing in this Act respecting midwives shall apply to legally qualified medical practitioners," was agreed to without debate.

On Clause 17, limiting the operation of the Act to England and providing that the General Medical Council shall act by the English Branch Council, which for all the purposes of the Act shall occupy the place of the General Medical Council,

Mr. TENNANT advocated the extension of this legislation to Scotland and said the promoters should either amend the present Bill with this object or introduce a separate measure for Scotland.

Mr. PARKER SMITH, speaking in the same sense, said that this legislation was quite as much if not more needed in Scotland than in England.

Mr. HEYWOOD JOHNSTONE said that he thought Scotland would be better dealt with in another Bill. He only hoped that those who had given such loyal help and assistance to this Bill would give the same to a Scottish Bill. It was really very much a question of machinery and they had not thought it desirable in this Bill to try to set up the

machinery which they believed would be necessary for Scotland and which, to some extent at all events, would differ from the machinery for England. He therefore could not hold out any hopes of dealing with Scotland on the report stage of this Bill, though he desired very much to see a Bill on this subject dealing both with Scotland and Ireland and also the Isle of Man.

The clause was then agreed to.

On the definition clause.

Mr. HEYWOOD JOHNSTONE moved to alter the definition of the term "midwife" so as to read "a woman who undertakes for reward to attend women in childbirth where no registered medical practitioner is engaged or employed." The effect of the amendment, he said, would be broadly to define women who attended child-birth into two classes—those who attended under the superintendence and regulation of a registered medical practitioner and those who attended without such superintendence and regulation. The women whose training they wished to ensure and whose practice to regulate were the latter. This definition would make it perfectly clear that they did not intend to interfere in any way with the monthly nurse who was engaged with a doctor to attend to a lying-in woman.

The amendment was agreed to by the Committee.

The next notice on the paper was an amendment in the name of Sir George Pilkington to make the definition read: "The term 'midwife' means a woman who undertakes for gain and in accordance with the provisions of this Act to attend women in natural labour but not in cases which present difficulty, abnormality, danger, or disease on the part of the mother or the new-born child."

Mr. VICARY GIBBS said he had promised to move this amendment but he had not promised to present arguments in its favour. Indeed, he believed this amendment would wreck the Bill and make it absolutely worthless.

The CHAIRMAN ruled that the amendment was out of order after what had been accepted by the Committee.

Clause 18 was then agreed to.

The Committee reverted to Clause 6, which was in the following terms, viz.:—

1. A county council shall be empowered to pay out of the county funds as general expenses incurred by them in the execution of their duties under the Local Government Act, 1888, any sum from time to time required to make good a deficiency in the funds of the Central Midwives Board.

2. Such expenses as the Treasury may certify to have been necessarily incurred by the General Medical Council in the execution of this Act shall be defrayed out of moneys provided by Parliament.

The CHAIRMAN said that the only part of this clause which came before the Committee was the first sub-section, the financial resolution with regard to the second sub-section not having been passed by the House.

On the motion of the SOLICITOR-GENERAL the first sub-section was struck out of the Bill.

A clause in these terms, "Any expenses under this Act payable by the council of a county or county borough shall be defrayed out of the county fund or out of the borough fund or borough rate, as the case may be," was, on the motion of the SOLICITOR-GENERAL, inserted in the Bill.

Three other new clauses were on the notice paper, but none of them were moved and the Bill was ordered for report to the House of Commons.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

AINSWORTH, H. P., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Fourth Sanitary District of the North Witchford Union, vice G. P. O'Connor, resigned.

BARON, H. N., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Orford Sanitary District of the Plomesgate Union, vice F. S. Flint, deceased.

BEVERIDGE, A. T. G., M.B., C.M. Aberd., has been re-appointed Medical Officer, Aberdeen General Dispensary.

BOND, FRANCIS THOMAS, M.D. Lond., M.R.C.S., F.R.S. Edin., has been re-appointed Medical Officer of Health for the Cirencester Rural District Council.

BRADBURNE, ARTHUR A., L.R.C.P. & S. Edin., L.F.P.S. Glasg., late House Surgeon at Teignmouth Hospital, has accepted an appointment under the War Office at Connaught Hospital, Aldershot.

BROADBENT, GEO., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Maltby Sanitary District of the Rotherham Union, vice W. H. Crossley, deceased.

CLARKE, ARTHUR EDWARD, M.B. Lond., M.R.C.S., L.R.C.P., has been appointed House Physician to Guy's Hospital, London.

COOPER, C. E., M.B., B.C. Cantab., has been appointed Certifying Surgeon under the Factory Acts, for the Urban District of Ivybridge, the Civil Pariah of Ugborough in Totnes Rural District, and the Civil Parishes of Cornwood, Harford, and Ermington, in Plympton St. Mary Rural District.

DALGARNO, J. J. Y., M.B., C.M. Aberd., has been re-appointed Medical Officer, Aberdeen General Dispensary.

DAVIES, AUBREY H., B.A. Cantab., M.R.C.S., L.R.C.P., has been appointed Assistant House Surgeon to Guy's Hospital, London.

DRAGE, L., M.D. Oxon., B.Ch., M.R.C.S., has been re-appointed Medical Officer of Health, Hatfield Rural District.

DRUMMOND, J., M.D. Glasg., has been appointed Medical Officer for the Westoe Sanitary District of the South Shields Union.

DURBRIDGE, H., M.R.C.S., L.R.C.P., has been appointed Assistant House Surgeon to Guy's Hospital, London.

EDKINS, J. S., M.B. Cantab., has been appointed a Joint Lecturer in Physiology at St. Bartholomew's Hospital Medical School, London.

EVANS, T., M.R.C.S., has been appointed Senior Assistant Medical Officer for the Workhouse, Parish of St. Pancras, London.

EVELYN, W. A., M.D. Cantab., L.R.C.P. Lond., M.R.C.S., has been appointed Honorary Physician to the York County Hospital.

FINDLAY, WM., M.D. Aberd., has been re-appointed Medical Officer, General Dispensary, Aberdeen.

FIRTH, C., M.D. Lond., F.R.C.S. Eng., has been appointed Medical Officer for the Children's Homes of the Gravesend and Milton Union.

GAITSKELL, H. A., M.A., M.B., B.C. Cantab., has been appointed House Surgeon to Guy's Hospital, London.

GOSTLING, G. W., M.B. Lond., has been appointed Honorary Surgeon to the York County Hospital.

GRIFFITHS, C. A., F.R.C.S. Eng., L.R.C.P. Lond., has been appointed Honorary Assistant Surgeon to the Cardiff Infirmary.

HALL, C. R., L.R.C.P. Edin., M.R.C.S., has been re-appointed Medical Officer for the Third Sanitary District, Hatfield Union.

HAMILTON-KENNY, F., M.R.C.S., L.S.A., has been appointed Medical Superintendent to the Gympie Hospital, Queensland, vice Wm. Stewart Geddie, resigned.

HANDS, A., L.R.C.P. Lond., M.R.C.S., has been re-appointed Medical Officer of Health by the Wednesfield District Council.

HENDERSON, A., M.B., C.M. Aberd., has been re-appointed Medical Officer, Aberdeen General Dispensary.

HILTON, C. T., B.S. Lond., has been appointed Assistant House Surgeon in the Surgery at Guy's Hospital, London.

HOPKIN, R., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Second Sanitary District of the Llandovery Union.

HORN, A. E., L.R.C.P. Lond., M.R.C.S., has been re-appointed Medical Officer by the Chelsea Board of Guardians.

HURLEY, J., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been re-appointed Medical Officer for the Magor Sanitary District of the Newport Union, Mon.

JONES, D. W., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Rotherham Sanitary District of the Rotherham Union, vice J. Branson, resigned.

KNOTT, WM. M.D. Edin., has been appointed Vaccination Officer for Middlesbrough.

LAMONT, J., M.B., C.M. Glasg., has been appointed Medical Officer for the Workhouse, Poplar Union, vice T. E. Bowkett, resigned.

LAWSON, T. C., M.R.C.S., has been appointed Medical Officer for the Longtown Sanitary District of the Dore Union, vice L. L. Thaine, resigned.

LITTLE, ALEX. M., M.B., Ch. M. Edin., has been appointed Junior House Surgeon to the Dispensary Hospital, Bury, Lancs.

MACNAMARA, A. P., M.B., B.Ch. Dub., has been appointed Medical Officer for the Shrivenham Sanitary District of the Faringdon Union, vice G. E. R. Nixon, deceased.

MCMURRAY, J. M.D. Irel., M.Ch., has been appointed Medical Officer for the Kirkdale Branch Workhouse, parish of Liverpool.

MARRIOTT, O., M.R.C.S., L.R.C.P., has been appointed Assistant House Surgeon to Guy's Hospital, London.

MATHEWS, J. S., L.R.C.P., L.R.C.S. Edin., has been re-appointed Medical Officer of Health by the Machynlleth Rural District Council.

MICHELL, R. W., M.B., B.S. Cantab., F.R.C.S. Eng., has been appointed for duty with the troops on active service in South Africa.

NEILD, NEWMAN, M.B., Ch.B. Vict., L.R.C.P., M.R.C.S., has been appointed Registrar to the Royal Hospital for Women and Children, Bristol.

NORTHCOTT, JOHN FORD, B.A. Cantab., M.R.C.S., L.R.C.P., has been appointed Assistant House Physician to Guy's Hospital, London.

OSBORN, A. G., M.B. Lond., has been appointed Assistant House Surgeon to Guy's Hospital, London.

PEARSON, H. A., L.R.C.P. Lond., L.R.C.P., L.R.C.S. Edin., has been appointed Medical Officer for the Fifth Sanitary District of the Royston Union, vice F. A. Davey, resigned.

PIRIE, W. R., M.B., C.M. Aberd., has been re-appointed Medical Officer, Aberdeen General Dispensary.

RANSOME, A. S., M.B., B.C., D.P.H. Cantab., has been re-appointed Medical Officer by the Southgate Urban District Council.

RHYS, W. L., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Aberdare Town Sanitary District of the Merthyr Tydfil Union, vice D. Davies, resigned.

ROBERTS, ARTHUR M., F.R.C.S. Edin., has been appointed Aural Surgeon to the Royal Berkshire Hospital, Reading.

SALMOND, J. L., M.B., C.M. Aberd., has been re-appointed Medical Officer, Aberdeen General Dispensary.

SHUFFLEBOTHAM, FRANK, M.A., M.B., B.C. Cantab., has been appointed Assistant House Surgeon in the Surgery at Guy's Hospital, London.

STEWART, WALTER G., M.B., B.S. Lond., has been appointed Assistant House Physician to Guy's Hospital, London.

SYMONDS, HORATIO P., F.R.C.S. Edin., M.R.C.S., has appointed Consulting Surgeon to the Warneford Asylum, Oxford.

SYMPSON, E. MANSEL, M.A., M.D., B.C. Cantab., M.R.C.S., has been appointed Medical Officer to Her Majesty's Prison, Lincoln, vice the late George Mitchison.

TAYLOR, J. G., B.A. Cantab., M.R.C.S., L.R.C.P., has been appointed House Physician to Guy's Hospital, London.

TEES, J., L.R.C.P., L.R.C.S. Edin., has been appointed Medical Officer for the Woolwich Sanitary District of the Woolwich Union, vice C. J. Fuller, resigned.

VINCENT, RALPH, M.B., B.S. Durh., M.R.C.P. Lond., has been appointed Assistant Resident Medical Officer to Queen Charlotte's Lying-in Hospital, Marylebone-road, London.

WILKIN, LANCELOT, M.A. Cantab., M.R.C.S., L.R.C.P., has been appointed House Surgeon to Guy's Hospital, London.

WOLFE, J. F., M.B., C.M. Edin., has been appointed Medical Officer of Health for the Heavitree Urban Sanitary District, vice R. J. Andrews, resigned.

WOODFORD, E. R., M.D. Aberd., M.R.C.S., has been re-appointed Medical Officer of Health by the Ventnor District Council.

WORGER, THOMAS HEWLETT, M.R.C.S., L.S.A., has been re-appointed Medical Officer of Health for Radstock, Somerset.

WREFORD, JOHN, M.B Durh., L.R.C.P. Lond., M.R.C.S., has been appointed Surgeon-Captain to the Volunteer Artillery Battery for South Africa.

YOUNG, M., M.D. Edin., D.P.H. Vict., has been appointed Medical Officer of Health for the Borough of Stockport.

Vacancies.

For further Information regarding each vacancy reference should be made to the advertisement (see Index).

BATH ROYAL UNITED HOSPITAL.—Resident Medical Officer for three years. Salary £100 per annum, with board, lodging and washing.

BOOTLE BOROUGH HOSPITAL, Liverpool.—Junior Resident House Surgeon. Salary £60, with board, washing, and lodging.

CANNING TOWN MEDICAL MISSION DISPENSARY, 520, Barking-road, E.—Assistant Medical Officer (qualified woman). Board and lodging provided.

CARDIFF INFIRMARY.—Assistant House Physician for six months. Salary at the rate of £50 per annum, with board, washing, and apartments. Also Resident Medical Officer for three years. Salary £100 per annum, with board, washing, and furnished apartments.

COUNTY ASYLUM, Shrewsbury.—Junior Assistant Medical Officer. Salary £130, rising annually by £10 a year to £150, with board, lodging, and washing. No liquors.

CUMBERLAND AND WESTMORLAND ASYLUM, Garlands, Carlisle.—Junior Assistant Medical Officer, unmarried. Salary £100 a year, with board and residence.

DEVON COUNTY ASYLUM, Exminster.—Third Assistant Medical Officer. Salary £120, rising to £150, with board, lodgings, &c.

DOWN (COUNTY) DISTRICT ASYLUM, Downpatrick.—Assistant Medical Officer, unmarried. Salary £100 per annum, with furnished apartments, board, washing, and attendance.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY, Dumfries.—House Surgeon. Salary £50 per annum, with board and washing. Also Assistant House Surgeon. Board and washing provided.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E.—Clinical Assistant in the Out-patient Department.

GENERAL AND EYE HOSPITAL, Swansea.—House Surgeon for twelve months. Salary £50 per annum, with board, apartments, washing, and attendance.

GLASGOW DISTRICT ASYLUM AND MENTAL HOSPITAL, Gartloch.—Medical Officer (Junior Assistant or Locum Tenens). Remuneration as may be arranged. Apply to the Clerk, Glasgow District Lunacy Board, 38, Cochrane-street, Glasgow.

GOVAN DISTRICT ASYLUM, Crookston, near Paisley, N.B.—Junior Assistant Medical Officer. Salary £120 a year, with rooms, board, laundry, and attendance.

HARRIS PARISH COUNCIL, FOR THE SOUTHERN DIVISION OF HARRIS.—Medical Officer. Salary £90. Apply to Mr. Thomas Wilson, Solicitor, Lochmaddy, Clerk.

HEREFORD GENERAL INFIRMARY.—Junior House Surgeon for six months, unmarried. Salary £17 10s., with furnished rooms, board, washing, gas, and attendance.

HOSPITAL AND DISPENSARY, NEWARK-UPON-TRENT.—House Surgeon, unmarried. Salary £80 per annum, with board and lodging in the Hospital.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident House Physicians for six months. Honorarium £25.

HULL ROYAL INFIRMARY.—Honorary Assistant Surgeon for five years.

HULME DISPENSARY, Dale-street, Stretford-road, Manchester.—House Surgeon. Salary £150 per annum, with apartments, attendance, coal, and gas.

LEEDS PUBLIC DISPENSARY.—Junior Resident Medical Officer. Salary £85 per annum.

LIVERPOOL STANLEY HOSPITAL.—Senior House Surgeon. Salary £80, with board, residence, and washing.—Also Honorary Physician.

LONDON TEMPERANCE HOSPITAL, N.W.—Physician to out-patients. Honorarium 50 guineas per annum.

LOUGHBOROUGH AND DISTRICT GENERAL HOSPITAL AND DISPENSARY, Loughborough.—Resident House Surgeon. Salary £100 per annum, with furnished rooms, attendance, and board.

MANCHESTER SOUTHERN AND MATERNITY HOSPITAL.—Resident House Surgeon. Honorarium at the rate of £50 per annum, and board.

NEW ZEALAND PUBLIC LUNATIC ASYLUMS.—Two Assistant Medical Officers, unmarried. Salary £250, with board, lodging, and washing. Apply to the Agent-General for New Zealand, 13, Victoria-street, London, S.W.

PADDINGTON GREEN CHILDREN'S HOSPITAL, London.—House Physician and House Surgeon for six months. Salary at the rate of 50 guineas a year, with board and residence.

PADDINGTON INFIRMARY.—Resident Clinical Assistant and Second Assistant to the Medical Superintendent for six months. Board, residence, and washing provided, and an honorarium at the rate of £50 per annum, conditionally. Apply to Dr. M. F. Squire at the Infirmary, 285, Harrow-road, W.

POPLAR HOSPITAL FOR ACCIDENTS, Poplar.—Assistant House Surgeon for six months. Salary at the rate of £65 per annum, with board and residence.

ROYAL ALBERT HOSPITAL, Devonport.—Assistant House Surgeon for six months. Salary at the rate of £40 per annum. Board, lodging, and washing.

ROYAL HALIFAX INFIRMARY.—Third House Surgeon, unmarried. Salary £50 per annum, with residence, board, and washing.

ROYAL HOSPITAL FOR SICK CHILDREN, Glasgow.—House Surgeon. Salary £50, with board and laundry.

ROYAL NATIONAL HOSPITAL FOR CONSUMPTION, Ventnor.—Clinical Assistant. Board, residence, and laundry provided. Apply to the Resident Medical Officer.

SALOP INFIRMARY, Shrewsbury.—Assistant House Surgeon for six months. Salary at the rate of £40 per annum.

SEAMEN'S HOSPITAL SOCIETY (*Dreadnought*), Greenwich, S.E.—House Physician for *Dreadnought* Hospital, Greenwich. Salary £75 per annum, with board and residence.

SCHOOL BOARD FOR LONDON EVENING CONTINUATION SCHOOLS.—Medical Superintendent for one year. Salary £100. Apply to the Schools Committee, Victoria Embankment, W.C.

STOCKPORT INFIRMARY.—Assistant House and Visiting Surgeon. Salary £70 per annum, with board, washing, and residence.

ST. SAVIOUR'S UNION, Surrey.—Second Assistant Medical Officer at the Infirmary, East Dulwich-grove, S.E. Salary at the rate of £100 per annum, with residential allowances, subject to statutory deductions. Apply to the Clerk, Offices, John-street West, Blackfriars-road.

TAUNTON AND SOMERSET HOSPITAL, Taunton.—Assistant House Surgeon for six months. Salary at the rate of £30 per annum, with board, lodging, and laundry.

TEIGNMOUTH HOSPITAL, South Devon.—House Surgeon. Salary £50 a year, with board, lodging, and washing. £6 per annum allowed in lieu of stimulants.

THE CHIEF INSPECTOR OF FACTORIES gives notice of vacancies as Certifying Surgeons under the Factory Acts at Charing, in the County of Kent, and at Cymmer and Rhondda Fach, in the County of Glamorgan.

VESTRY OF CLERKENWELL, London.—Medical Officer of the parish, *pro tem.* Salary £250 per annum. Apply to the Vestry Clerk, Town Hall, Clerkenwell.

WESTON-SUPER-MARE HOSPITAL.—House Surgeon, unmarried. Salary £80 per annum, with board and residence in the hospital.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL, Wolverhampton.—Assistant House Physician for six months. Honorarium at the rate of £50 per annum, and board, lodging, and washing.

WORCESTER GENERAL INFIRMARY.—Assistant House Surgeon for two years, unmarried. Salary £70 per annum, with board, residence, and washing.

YORK COUNTY HOSPITAL.—House Surgeon. Salary £90 per annum, with board, residence, and washing.

Births, Marriages, and Deaths.

BIRTHS.

BEST.—On March 18th, at Waltham-cross, Herts., the wife of F. H. de Greaves Best, M.R.C.S., L.R.C.P., of a son.

COLLINS.—On March 21st, at Ulverston, Lancashire, the wife of A. W. Collins, M.B., D.P.H., of a daughter.

ECCLES.—On March 24th, at Harley-street, W., the wife of W. McAdam Eccles, M.S. Lond., F.R.C.S. Eng., of a daughter.

GLASSON.—On March 25th, at Cardigan House, Chadwell Heath, Essex, the wife of C. J. Glasson, M.D., of a son.

HOWITT.—On March 26th, at Ebor House, Grove-park, Chiswick, the wife of G. G. Howitt, M.D., of a son.

SUTCLIFF.—On March 19th, at Great Torrington, Devon, the wife of Harvey Sutcliff, M.B., M.R.C.S., of a daughter.

SYLVESTER.—On March 23rd, at Leiston, Suffolk, the wife of Herbert Mayris Sylvester, M.R.C.S., L.R.C.P. Lond., of a daughter.

TYSON.—On March 22rd, at Lowestoft, the wife of Wilson Tyson, M.A., M.B., B.C. Cantab., of a daughter.

WHITCOMBE.—On March 26th, at 164, Earl's Court-road, Kensington, the wife of P. P. Whitcombe, M.B. Lond., of a son.

DEATHS.

BAYLEY.—On March 23rd, at Priory Cottage, Northampton, Cecil Bayley, L.R.C.S., L.R.C.P. Edin., aged 31 years.

FYFE.—On March 26th, at Ealing, Andrew Fyfe, M.D., F.R.C.S. Edin., aged 72 years.

GUNNING.—On March 22nd, at Addison-crescent, Kensington, Robert Halliday Gunning, M.D., LL.D., aged 81 years.

KING.—On March 16th, at Whitstable, Kent, Henry Stavely King, M.D. Lond., M.A. Cantab, aged 68 years.

***N.B.—A fee of 5s. is charged for the insertion of Notices** of Births, Marriages and Deaths*

Notes, Short Comments, and Answers to Correspondents.

THE REGISTERED QUACK.

THE ordinary quack undertakes to treat diseases about which he knows absolutely nothing. But at all events he has not been admitted into a brotherhood of men membership of which entails great responsibilities and the presumption of possessing an amount of knowledge which has been keenly tested. When a qualified and registered medical man does go wrong—and fortunately such instances are rare—he goes very wrong indeed. He has nerve and he has knowledge. For this reason we desire to call the attention of the medical profession, to say nothing of the General Medical Council, to an advertisement of the most shameless character which appears in the *Queensland Times* for Jan. 25th, 1900. The advertisement in question is on page 6 and occupies the top half of the left-hand column. We reproduce it as it stands, with the exception of the embellishment of "Dr." Tarrant's portrait.

Dr. Tarrant,

F.R.C.S.E., L.R.C.P.E., L.M.R.C.P.E., ALSO L.R.C.S.I.,

FOR sixteen years Hon. Surgeon to the Sydney Hospital—Registered by the GOVERNMENT Medical Board—has during his recent world-wide travels discovered a

New Method of Healing,

which acts like Magic in removing Foul Breath, Indigestion, Palpitation, Blushing, Shortness of Breath, Impaired Memory, Weak, Sore, Sunken, or Dark-Circled Eyes, Sallow or Pimply Skin, Dulness of Intellect, Piles, Constipation or Relaxation of the Bowels, Bad Taste, Wind, Desire for Solitude or Drink, Bashfulness, Weak Back, Bad Feet, Oozing of Saliva from the Mouth during Sleep, Neuralgia, Hacking Cough, Giddiness, Fear of Insanity or Suicide, Inclination to throw yourself down when over water, Inability to keep your Thoughts off Impure Subjects, Dreams, Twitching of the Eye-lids, Numbness or Prickly Sensations, Timidity, Fear of Impending Danger, &c.

Dr. TARRANT makes *absolutely no charge* for Advice—but £1 is required to cure almost any complaint, including Skin Diseases, Liver Troubles, Gravel, Scrofula, Throat, Eye, or Ear Complaints, Fistula, Piles, Paralysis, Sciatica, Rheumatism, Constipation, Hip Disease, Dropsy, Worms, Epilepsy (Fits), Bright's Disease, Influenza, Lung Troubles, Coughs, Neuralgia, Varicocele, &c.

You should, to avoid delay, enclose £1 in First Letter. If Dr. TARRANT decides that he cannot cure you, *the pound will be returned to you.*

All communications should be addressed to

DR. HARMAN TARRANT,

151, ELIZABETH-STREET, SYDNEY;

Or, if preferred, H.T., Box 1204, G.P.O., Sydney.

If you desire full information re All Complaints, or if it is your intention to Marry send 6d. in Stamps for Dr. TARRANT'S Exhaustive Work. This beautiful volume will be found to contain 125 prescriptions for self-cure; many appropriate illustrations, and is entitled

"Independence of the Healthy."

(Please mention "Queensland Times" when writing.)

Now we have no hesitation in saying that this advertisement is one of the most pestilential we have seen and the worst part of the matter is that "Dr." Harman Tarrant's name appears in the Medical Register for 1899 as Tarrant, Harman John; Sydney, New South Wales; 1867, Oct. 21st, E.; Lic. R. Coll. Surg. Irel., 1867; Lic. R. Coll. Phys. Edin. 1867; Fell. R. Coll. Surg. Edin., 1887. Mr. Tarrant's name should at once be removed from the Medical Register and we trust that the bodies which gave him his diplomas will also take some notice of his behaviour.

Mr. Tarrant's effusion also appears in the *Sunday Times* of Sydney of Feb. 11th, 1900, in company with a number of other advertisements of the same kidney. One of these is headed: "Dr. Gibbons, M.A., L.R.C.P.E., L.R.C.S.E., L.M.R.C.E., ETC." "Dr." Gibbons describes himself as being trebly qualified and registered in London and the colonies as a physician and surgeon. He also says that he has made a life-long study of private diseases. Unlike Tarrant, Gibbons does not say anything about no charge for advice but modestly intimates that £1 is sufficient to send. Gibbons does not give his initials so we are unable to confirm his statement that he is registered as a physician and surgeon in London. In the Medical Register for 1899 there is no Gibbons in the Colonial List, but on page 632 there are seven gentlemen bearing the name of Gibbons. Only two of these, however, register an Edinburgh degree or diploma and they are respectively an M.D. and an M.B. of the University of Edinburgh. Obviously neither of these gentlemen is the person upon whom we are animadverting. Perhaps the General Medical Council will take note of Gibbons's assumption.

THE PARIS MUNICIPALITY AND THE SPREAD OF INFECTION.

To the Editors of THE LANCET.

SIRS,—On Friday, March 16th, a by-law was passed by the Paris Municipal Council against spitting in public places, including, as I understand, the streets of the city. From an æsthetic point of view their action is beyond cavil. Their intention, however, as judged by the speech of M. Fortin, who moved the resolution, was the suppression of contagium. To me it seems the converse will result for the following reasons. Sunlight and fresh air have a powerful bactericidal action, so much so that the tubercle bacillus is destroyed when exposed to both in from eight to 12 hours. I believe I am correct in stating so is also the Klebs-Löffler and, in fact, the majority of micro-organisms. Again, dilution, such as would of necessity exist in open places, attenuates contagium. Persons who suffer from chest and throat affections must expectorate. What, then, will be the result? They will spit into their handkerchiefs, those will go into the soiled clothes basket swarming with micro-organisms, which, in the heated air of the house, will rapidly desiccate. We have, as a consequence, a concentrated contagium in a confined space.

I am, Sirs, yours faithfully,

Ballincollig, March 22nd, 1900. JAMES J. HARDING, D.P.H., &c.

To the Editors of THE LANCET.

SIRS,—The recent enactment of the Paris Municipal Council against street-spitting should at least awaken consideration of the subject by our own London County Council. I should imagine in the case of a similar prohibition (as obtains in the United States and Paris) being adopted the district of Spitalfields should be exempt and the attention of the officers of the Sal(i)vation Army called to the matter. How the London County Council can ever hope to expect a rate should they be compelled to pass a by-law against spitting in the streets seems a puzzle to me.

I am, Sirs, yours faithfully,

Cheltenham, March 26th, 1900. ALEXANDER DUKE.

SURGERY IN FICTION.

TRUTH, it is often said, and rightly so, is stranger than fiction. The astounding cases of recovery after injury to what are commonly supposed to be vital portions of the economy which have been reported from time to time in our columns in the graphic letters supplied to us from the front by Sir William Mac Cormac are sufficiently remarkable, but even they must pale before the quotation from a popular novel which is given in the following letter from a correspondent:—

To the Editors of THE LANCET.

SIRS,—The astonishing skill and profound knowledge of the "doctor" of fiction are well known. As you have occasionally amused your readers with extracts illustrating the above I think the following from a work by a well-known novelist may interest you. The hero is accidentally run through the "chest" by a foil the button of which had become detached. The "medical practitioner of the district" is on the spot and pronounces the wound as dangerous but not necessarily fatal. Later, however, "he will by no means commit himself to a definite opinion" as to prognosis and delivers the following opinion:—"Without a doubt it was a critical case. Though the cœliac axis had been missed by a miracle the vasa-vasorum blood-vessel had suffered lesion. The left sub-clavian artery had been torn through, yet from its known power of contraction he trusted that the interior lining would be closed, when further loss of blood would cease. Of course unfavourable symptoms might supervene at any moment—at any moment. Quiet—that is absolute rest—was indispensable. With no exciting visits, and—yes—with the closest attention and good nursing, a distinctly favourable termination might be—ahem—hoped for." You will be glad to hear, however, that despite the above formidable injuries in the course of a week the popular practitioner alluded to had the honour of informing the anxious inhabitants of the surrounding district that the injury having, as he had the honour to diagnose, "providentially not occurred to the trunk artery the middle coat of the smaller blood-vessel had, from its elastic and contractile nature, after being torn by the partially blunted end of the foil, caused a closure. In point of fact, the injury had yielded to treatment. He would definitely pledge himself, in fact, that the patient was bordering upon convalescence. In a week or two he would be ready to support a removal, &c., when doubtless his youth, temperate habits, and excellent constitution would combine to produce a complete recovery." The above is apparently written in all seriousness and the author is, as I have said, one who has achieved for himself a considerable reputation.

I am, Sirs, yours faithfully,

W. G. M.

CONFLICTING MEDICAL EVIDENCE: A VERY PROPER VERDICT.

AN inquest was held on March 20th concerning the cause of the death of a man named William Tabern. Up to Nov. 14th, 1899, Tabern had worked at the White Cross Collieries. On that day his back and leg were hurt by a stone falling upon them. He did not go to work again and stayed for a month in bed. Dr. E. P. Twyford said that from Feb. 27th to March 5th, 1900, he had seen Tabern daily. He had

made a post-mortem examination and had found excessive degeneration of the arteries of the brain. Mr. P. J. O'Keeffe was present at the post-mortem examination. Dr. Twyford gave it as his opinion that the man died from natural causes—i.e., disease of the brain. Mr. O'Keeffe said that in his opinion death was caused by an accident. Tabern had worried a great deal after his accident lest he should not be able to get work again after his recovery. He would have lived longer if the accident had not occurred. A majority of the jury returned a verdict that the deceased died from the accident. The coroner, however, said that he must have a unanimous verdict. The inquiry was adjourned. At the resumption on March 21st further medical evidence was given by Mr. Turner, Dr. Twyford's assistant, and Dr. Robert Jackson. Both were of opinion that death was due to degeneration of the cerebral arteries and that the accident had in no way hastened death. Mr. O'Keeffe repeated that he considered that the injury was the indirect cause of the man's death. The jury eventually returned an open verdict, stating that they were unable to say whether the degenerative changes in the brain were the result of the accident or not. The coroner said that he quite agreed with the verdict.

"UNUSUAL ENDING OF A CASE OF EMPYEMA."

To the Editors of THE LANCET.

SIRS,—The following case may prove of interest in relation to Dr. Cropper's case published in THE LANCET of March 17th. In December, 1896, a friend of mine in Salford had a case of pneumonia in a girl, aged 19 years. The doctor died shortly after and a gentleman who acted as "locum" till the widow could make arrangements asked me to go with him to see the above patient. We found the whole of the left side dull, also an emphysematous area of about two and a half inches in diameter, so far as I recollect, above the left breast. She was coughing up fœtid pus and was vomiting it also, but the quantity vomited was much greater than that expectorated. A few days after I removed a portion of rib and drained. The girl made a good though rather tedious recovery, with much less deformity than we had expected. Was the vomited pus first coughed up and swallowed or was there an opening from the pleura into the stomach or the œsophagus? I think the quantity vomited favours the latter view. I should be glad of the opinions of others on this case.

I am, Sirs, yours faithfully,

Great Moor, Stockport, March 22nd, 1900. W. R. MANDER.

**** Perforation into the œsophagus is probably what occurred.—ED. L.

SUCCESSFUL ACTION BY A MEDICAL MAN.

AN action was recently tried in the Tunbridge Wells County Court wherein Mr. W. Stamford, M.R.C.S. Eng., sued Mr. Hammond, a local builder, for the sum of £31 8*s.* 6*d.* for medical attendance. Mr. Stamford gave evidence that he had attended defendant for a long time. Mr. Robb, a solicitor, who appeared for Mr. Hammond, argued that the charges were excessive and that defendant was only a working bricklayer. Dr. J. E. Ranking, the senior physician at the Tunbridge Wells Hospital, said he knew the case of Mr. Hammond well. It was a serious and prolonged case and the fees were justifiable. Defendant was ordered to pay the amount claimed and costs, on which we congratulate Mr. Stamford.

A QUESTION OF SALARY.

To the Editors of THE LANCET.

SIRS,—A practitioner for whom I acted as locum tenens paid me at the rate of £3 3*s.* per week, stating that he had agreed upon those terms with the chemists from whom he got my name. I told him that my fee was £4 4*s.* per week. On subsequent inquiry from the chemists I found that no mention had been made of terms. Am I entitled to the balance of my fee and, if so, what steps should I take to recover it? I have already written to the principal stating my claim.

I am, Sirs, yours faithfully,

March 20th, 1900. C.M., M.B.

**** If "C.M., M.B." agreed to give his services for £3 3*s.* per week he must abide by his bargain. But if the principal obtained those services for £1 1*s.* a week less than he could otherwise have obtained them for by making an inaccurate statement, we think the principal should not keep "C.M., M.B." to the bargain, but should pay him on the higher scale.—ED. L.

"THE ROYAL NAVY MEDICAL DEPARTMENT."

To the Editors of THE LANCET.

SIRS,—My attention has been called to a letter in THE LANCET of March 24th, where on p. 899 a correspondent refers to the inspection by the General Medical Council of certain university examinations for the M.B. degree. He is exercised to find that the Medical Department of the Admiralty signalises in the Navy List the holders of degrees and withholds any other qualifications held by non-graduates. He seeks to belittle the value of the M.B. degree by reference to a report of the Visitor and Inspectors of the Medical Council on two of the universities, part of which he quotes. The date of that report is 1885. Since that time—viz., in 1892—these universities, together with all others in the three kingdoms, have been again visited and inspected by the Medical Council and in common fairness your correspondent should have quoted from these, the last, reports. A reference to vol. xxx., 1893, of the Council's Minutes will satisfy him, and all others concerned, that the examinations he refers to were found to be sufficient and satisfactory. It forms no part of the duty of the General Medical Council to indicate whether any examination held by universities or corporations is superior or inferior to another. Its statutory duty is merely to declare whether these examinations are "sufficient" within the meaning of the Medical Act. I will venture lastly to state my belief that the Medical Department of the Admiralty well understands its own business.

I am, Sirs, yours faithfully,

DYCE DUCKWORTH,
Chairman of the Examination Committee
March 26th, 1900. of the General Medical Council.

DRUGS WHICH COLOUR THE URINE.

To the Editors of THE LANCET.

SIRS,—I should feel obliged if you could tell me through THE LANCET what are the different drugs which colour urine, also the names of any books giving information on the subject.

I am, Sirs, your faithfully,

March 23rd, 1900. STUDENT.

**** Rhubarb and santonin colour the urine yellow, but if the urine be very alkaline santonin colours it red. Carbolic acid, impure salicylates, and creasote give a blackish-green colour and methylene blue colours the urine blue, senna gives it a brown colour, and hæmatoxylin a reddish tinge. Information may be found in various books upon clinical diagnosis.—ED. L.

TO MEDICAL FREEMASONS.

To the Editors of THE LANCET.

SIRS,—May I, through your columns, ask my Masonic brethren—more especially old King's men—for any votes they can possibly spare or obtain on behalf of the little son of the late F. W. Skrimshire (an obituary notice of whom appeared in THE LANCET of Dec. 2nd, 1899) who is a candidate for the Boys' School at the coming April election, and, I believe, the only one from our profession. They will be most gratefully received either by the widow, Mrs. Skrimshire, 2, Southampton-terrace, Farnborough, Hants, or by

Yours faithfully,

GEO. JNO. RADY.

Juglans Lodge, Enfield, Middlesex, March 27th, 1900.

"A SAD AND URGENT CASE."

To the Editors of THE LANCET.

SIRS,—The following are the subscriptions received since the last notified and which now close the list, the total amount subscribed in response to Dr. Macnaughton Jones's appeal being £110 5*s.* 6*d.* I enclose a copy of receipt from the solicitor who has kindly undertaken the further disbursement of the fund in weekly payments.

I remain, Sirs, faithfully yours,

WILLIAM H. BOURKE, M.D. Brux.

South Kensington, March 28th, 1900.

	£	*s.*	*d.*		£	*s.*	*d.*
Miss Corrie	1	1	0	Sir Thomas Smith, Bart.,			
Mr. P. J. Freyer	1	1	0	F.R.C.S.	5	0	0
Mr. W. Roughton	1	0	0	Mrs. Tomkins	0	10	0
Mr. A. Cosgrave	1	1	0	Mrs. Jones	0	5	0

[COPY.]

Carlton Chambers, 8, Regent-street, S.W., Feb. 26th, 1900.

SAD AND URGENT CASE.

Received from Dr. W. H. Bourke, the Treasurer of this Fund, the sum of eighty-two pounds nineteen shillings and tenpence, being the balance in his hands (after certain urgent payments), to be applied by me as arranged for the benefit of the recipient and his family. HERBERT R. BLISS, Solicitor.

ENGLISH PRACTITIONERS IN SPAIN.

A CORRESPONDENT would be glad to know what restrictions, if any, govern the practice in Spain of medical men holding English qualifications.

Surgeon.—The debt ought to be recovered by legal process in the county court. The circumstances are such that if they are properly supported by evidence the debtor will obtain no sympathy from the judge. We do not think any criminal proceedings are indicated, and are very doubtful if such could be taken; but of course our correspondent will only act under legal advice.

W. S.—We agree with much of our correspondent's letter, but we cannot advocate the giving of heroic doses of dangerous drugs. The dosage of the Pharmacopœia is based upon the experience of many medical men carefully verified and collated, and the medical man who administers a dose four times as large as the official one takes upon himself a dangerous responsibility.

Medicus.—We are not aware that the paper is supplied through us. Our correspondent should consult his newsagent. We have not the information asked for concerning the *Biographer*, but we advise "Medicus" not to give the information asked for and not to send money.

Inquirer.—The purchase price is usually calculated upon gross receipts.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, March 29th, 1900.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Mar. 23	29·76	E.	...	47	46	42	41	43	Overcast
" 24	29·87	N.E.	...	58	43	37	38	39	Overcast
" 25	29·81	N.E.	...	85	44	36	36	38	Cloudy
" 26	29·66	N.	...	77	43	34	35	36	Overcast
" 27	29·66	N.E.	...	79	45	34	35	37	Overcast
" 28	29·53	W.	0·15	75	45	35	38	39	Raining
" 29	29·90	N.	...	76	45	32	35	37	Fine

During the week marked copies of the following newspapers have been received: *Leinster Express, Blackburn Daily Telegraph, Sun (London), Sanitary Record, West Morning News, Caterer (London), Craven Herald, Weekly Messenger (Paris), Oldbury Weekly News, Burnley Gazette, Sheffield Daily Telegraph, Hereford Times, Glasgow Herald, Norfolk Weekly Standard, Market Harborough Mail, Birmingham Daily Post, Wiltshire Chronicle, Times of India, Pioneer Mail, Citizen, Scotsman, Builder, Architect, Staffordshire Advertiser, Yorkshire Post, Derbyshire Courier, Halifax Courier, Bristol Mercury, Newcastle Daily Chronicle, Leeds Mercury, Brighton Gazette, Manchester Guardian, North Middlesex Chronicle, Shields Morning Mail, Shanghai Mercury, Dorset County Chronicle, Aberystwyth Observer, Hertfordshire Mercury, Mining Journal, Local Government Chronicle, Surrey Comet, Reading Mercury, City Press, Surrey Advertiser, Sunday Times (Sydney, N.S.W.), Local Government Journal, Weekly Free Press and Aberdeen Herald, Portadown News, Ilford Guardian, Southern Times (Weymouth), Cambridge Chronicle, North Wales Times, Liverpool Daily Post, Stroud News, &c., &c.*

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (2nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. .

TUESDAY (3rd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat 2 P.M. and 6 P.M.), Royal Ear (3 P.M.).

WEDNESDAY (4th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.) Cancer (2 P.M.)

THURSDAY (5th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.) University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.).

FRIDAY (6th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.).

SATURDAY (7th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (2nd).—MEDICAL SOCIETY OF LONDON.—9 P.M. Sir W. M. Banks: The Present Position of the Parasitic and Infective Theories of Cancer, Operative Proceedings for the Cure of Mammary Cancer, the Author's Statistics. Lantern Demonstration to illustrate the first subject. (Lettsomian Lecture).

ODONTOLOGICAL SOCIETY OF GREAT BRITAIN (40, Leicester-square).—7 P.M. Council Meeting. 8 P.M. Paper:—Mr. G. J. Goldie: X-rays in the Practice of Dentistry. Casual Communications:—Mr. H. Baldwin: A Case of Necrosis.—Mr. H. G. Read: A New Saliva Tube.

TUESDAY (3rd).—PATHOLOGICAL SOCIETY OF LONDON (20, Hanover-square, W.).—Dr. S. Martin and Prof. Sherrington will open a discussion on the Changes of the Blood in Disease, and the following gentlemen will read papers or join in the discussion—Dr. A. Wright, Dr. H. Hawkins, Dr. W. Hunter, Dr. R. Bradford, Dr. Drysdale, Dr. Bryant, Dr. Garrod, and Dr. Whitfield.

WEDNESDAY (4th).—OBSTETRICAL SOCIETY OF LONDON.—8 P.M. Specimens will be shown by the President, Dr. W. Duncan, Dr. Cullingworth, Dr. Stabb, Dr. Addinsell, Dr. Macnaughton-Jones, Dr. C. H. Roberts, Dr. Tate, and Dr. A. W. W. Lea. Papers:—Dr. J. M. M. Kerr: Three Cases of Incarceration of the Retro-displaced Gravid Uterus and one of Extra-uterine Pregnancy simulating that condition.—The President (Mr. A. Doran): A Case of Extra-uterine Gestation in which Fœtal Death occurred at the Eighth Month after Spurious Labour, Abdominal Section two months later.

THURSDAY (5th).—HARVEIAN SOCIETY OF LONDON (Stafford Rooms, Titchborne-street, Edgware-road).—Discussion on Purulent Nasal Discharges and their Treatment (opened by Mr. E. Roughton.) Dr. D. Grant, Dr. W. Hill, Dr. H. Tilley, and others will take part.

FRIDAY (6th).—WEST LONDON MEDICO-CHIRURGICAL SOCIETY (West London Hospital, Hammersmith, W.).—Papers:—Mr. P. Dunn: Purulent Ophthalmia and its Treatment.—Dr. H. Snow: Three Cases illustrating the Clinical Behaviour of Gall-stones.

LARYNGOLOGICAL SOCIETY OF LONDON (20, Hanover-square, W.).—5 P.M. Cases will be shown by Sir Felix Semon, Dr. Beale, Dr. StClair Thomson, Dr. W. Williams, Dr. Tilley, Dr. D. Grant, Mr. C. Symonds, Mr. Lake, and Mr. Waggett.

SOCIETY OF ANÆSTHETISTS (20, Hanover-square, W.).—8.30 P.M. Paper:—Mr. E. Willett: The Administration of Anæsthetics to Young Children.

WEST KENT MEDICO-CHIRURGICAL SOCIETY (Royal Kent Dispensary, Greenwich-road, S.E.).—8.45 P.M. Discussion on the Midwives Registration Bill (introduced by Dr. F. S. Toogood).

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (2nd).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. J. F. Payne: Consultation. (Skin.)

TUESDAY (3rd).—ROYAL COLLEGE OF PHYSICIANS OF LONDON.—5 P.M. Dr. W. B. Cheadle: Some Cirrhoses of the Liver. (Lumleian Lecture.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. S. J. Sharkey: Consultation. (Medical.)

ROYAL INSTITUTION OF GREAT BRITAIN.—3 P.M. Prof. E. Ray Lankester: The Structure and Classification of Fishes.

WEDNESDAY (4th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. G. Heron. Consultation. (Medical.)

THURSDAY (5th).—ROYAL COLLEGE OF PHYSICIANS OF LONDON.—5 P.M. Dr. W. B. Cheadle: Some Cirrhoses of the Liver. (Lumleian Lecture.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—3 P.M. Dr. Harrison Low: Class. Practical Application of Roentgen Rays. Demonstration V. 4 P.M. Mr. J. Hutchinson: Consultation. (Surgical.)

FRIDAY (6th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. R. Lake: Consultation. (Ear, and Throat.)

ROYAL INSTITUTION OF GREAT BRITAIN.—9 P.M. Prof. Dewar: Solid Hydrogen.

EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE, OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

Communications, Letters, &c., have been received from—

A.—Dr. C. M. Allan, Longton; Messrs. Allen and Hanburys, Lond.; Dr. Adamson, Hetton-le-Hole; A. D. H.

B.—Mr. C. A. G. Browne, Lond.; Brin's Oxygen Co., Lond.; Mr. A. Benthall, Lond.; Lieutenant-Colonel S. H. Browne, I.M.S., Lahore, India; Mr. G. A. W. Barber, Lond.; *Bath Journal*, Proprietors of; Mr. W. Brown, Cheltenham; Beverit, Ltd., Lond.; Mr. L. A. Bidwell, Lond.; Mr. H. Belcher, West Bridgford; Messrs. Baiss Bros. and Co., Lond.; Messrs. Barstow and Millar, Edinburgh; Dr. J. Bride, Wilmslow; T. B. Browne, Ltd., Lond.; Messrs. Bates, Hendy, and Co., Lond.; Bath Royal United Hospital, Secretary of; Mr. C. Birchall, Liverpool; Mr. L. Browne Lond.; Dr. Clark Bell, New York City; Dr. R. D. Batten, Lond.; Mr. F. A. Bloxam, Lond.

C.—Señor D. N. Cañete, Jerez de la Frontera, Spain; Mr. L. N. Choudhuri, Balaghat; Cancer Society, Lond., Secretary of; Colonial Office, Lond.; Charity Organisation Society, Lond.; Messrs. Cuxson, Gerrard, and Co., Oldbury; County Asylum, Shrewsbury, Medical Superintendent of; Cambridge Summer School of Medicine, Hon. Secretary of; Cardiff Infirmary, Secretary of; Messrs. Crowley and Bolger, Dublin; Cumberland and Westmorland Asylum, Carlisle; Casseler Gummiwaarenfabrik, Germany; County Hospital, York, Secretary of; Chester General Infirmary, Secretary of; C. W.

D.—Captain H. R. Drake-Brockman, I.M.S.; Mr. L. J. Dods, Lond.; Dumfries and Galloway Royal Infirmary, Treasurer of; Dunstable's Food Co., Lond.

E.—Dr. G. J. Eady, Lond.; Dr. W. Edmunds, Lond.; Mr. Edridge-Green, Lond.

F.—Dr. G. Foy, Dublin; Mr. E. H. Freeland, Lond.; Messrs. Fairchild Bros. and Foster, Lond.; Flower House, Catford, Medical Superintendent of.

G.—Dr. E. V. Gostling, Stowmarket; Mr. J. Gray, Lond.; Messrs. J. Griffin and Son, Lond.; G. de V. B.; Messrs. R. W. Greeff and Co., Lond.; Mr. R. Graham, Pitlair; Dr. K. Grube, Lond.; Mr. P. T. Goodman, Lond.; Mr. E. F. Grun, Southwich; Mr. C. H. Garland, Lond.; Glasgow Royal Infirmary, Superintendent of; G. W. O.

H.—Dr. J. Basil Hall, Bradford; Mr. J. Hopkins, Lond.; Hereford General Infirmary, Secretary of; Messrs. Holt, Risque, and Robson, Manchester; Mr. F. C. W. Hounsell, Lustleigh; Dr. A. E. Henderson, Nagpur, India; Dr. Horton-Smith, Lond.; Hospital for Sick Children, Lond., Secretary of; Huddersfield, Medical Officer of Health of; Dr. J. P. Henry, Lond.; Messrs. J. H. Holmes and Co., Lond.; Mr. J. L. A. Hope, Addlestone; Miss A. K. Harding, Lond.

I.—Messrs. Idris and Co., Lond.

J.—Miss H. M. Johnson, Liverpool; Mr. R. Johnson, Hoilesley Bay; Jeyes' Sanitary Compounds Co., Lond.; J. S.

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